ST MARTINS MARSH

AQUATIC PRESERVE

MANAGEMENT PLAN

SEPTEMBER 9, 1987

DEPARTMENT OF NATURAL RESOURCES

ST. MARTINS MARSH AQUATIC PRESERVE

MANAGEMENT PLAN

September 9, 1987

Tom Gardner

Executive Director

Department of Natural Resources

This Plan was prepared by
The Bureau of Land and Aquatic Resource Management
Division of Recreation and Parks

Preparation of this management plan was primarily supported by a grant from the U.S. Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration, and the Florida Department of Environmental Regulation, the Office of Coastal Management, through the Coastal Zone Management Act of 1972 as amended.

EXECUTIVE SUMMARY

The St. Martins Marsh Aquatic Preserve comprises an area of approximately 23,123 acres of sovereignty submerged lands located along the west central coast in Citrus County. This preserve represents one of the most pristine regions in the state, and is unique in that it represents a transitional zone between temperate and tropical.

St. Martins Marsh was designated an aquatic preserve on October 21, 1969 for the primary purpose of preserving the biological resources of the Marsh and associated waters. This area consists predominately of salt marsh vegetation and includes mangroves, oyster bars, scallop beds, and seagrasses. The preserve is important in protecting vital habitat to an extensive array of fish, birds, and other wildlife including the endangered West Indian manatee. Maintaining the continued health of the preserve will involve minimizing water pollution and losses of wetlands resulting from urban, residential and industrial development in the region.

The major management objective of the aquatic preserve program is to ensure the maintenance of essentially natural conditions. Management will also be directed to ensure public recreational opportunities while assuring the continued propagation of fish, birds, manatees, and other wildlife resources. This task will be guided by the identification and mapping of natural resources and habitats necessary to meet these objectives. An additional management objective is to review and comment on applications for the use of state-owned submerged lands. Accomplishing these objectives will require a fully implemented management program under the guidance of an on-site Environmental Specialist for the aquatic preserve, based out of a field office outside the city of Crystal River.

STATE OF FLORIDA

BOARD OF TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND

R E S O L U T I O N

WHEREAS, the Board of Trustees of the Internal Improvement Trust Fund is charged with the acquisition, administration, management, control, supervision, conservation, protection, and disposition of all lands title to which is vested in the Trustees under Chapter 253, Florida Statutes; and

WHEREAS, Chapter 258, Florida Statutes, directs that state-owned submerged lands within aquatic preserves be set aside forever in their essentially natural or existing condition for the benefit of future generations; and

WHEREAS, the Trustees are charged with the adoption and enforcement of reasonable rules and regulations to carry out the provisions of Sections 258.35 through 258.46, Florida Statutes, regarding the regulation of human activity within the aquatic preserves so as not to unreasonably interfere with lawful and traditional public uses of the preserves; and

WHEREAS; Section 18-20.13, Florida Administrative Code, mandates the development of management plans for aquatic preserves; and

WHEREAS, the Trustees desire to serve the public by effectively planning, managing and protecting aquatic preserves; and

WHEREAS, the Trustees have recognized the St. Martins Marsh Aquatic Preserve as a biological/scientific preserve in formal action on October 21, 1969; and

WHEREAS, the Trustees recognize the importance and benefits of protecting the natural resources and preserving the natural ecosystem and aesthetics in the St. Martins Marsh Aquatic Preserve area; and

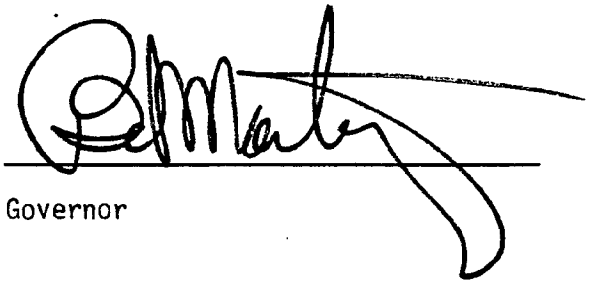
NOW THEREFORE BE IT RESOLVED that the Board of Trustees of the Internal Improvement Trust Fund hereby adopts the St. Martins Marsh Aquatic Preserve Management Plan; and

BE IT FURTHER RESOLVED that the St. Martins Aquatic Preserve Management Plan shall serve as a fundamental policy guideline for the Trustees and other state and local agencies having jurisdiction relative to maintaining the natural resources and environmental quality of this aquatic preserve, and shall provide the overall policy direction for the development and implementation of all administrative rules and programs related to the management of state-owned submerged lands within the St. Martins Marsh Aquatic Preserve; and

BE IT FURTHER RESOLVED THAT the Department of Natural Resources, Division of Recreation and Parks, is hereby designated as agent for the Trustees for purposes of aquatic preserve planning and management.

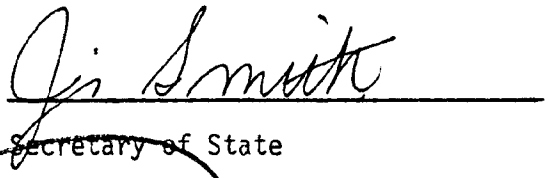
IN TESTIMONY WHEREOF The Board of Trustees of the Internal Improvement

Trust Fund have hereunto subscribed their names and have caused the Official Seal of the Board of Trustees of the Internal Improvement Trust Fund to be hereunto affixed in the City of Tallahassee, The Capitol, on this the ninth day of September, A.D., 1987.

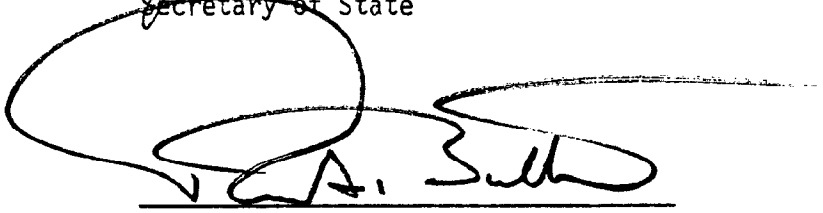


Governor

(Seal)



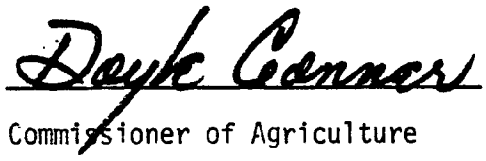
Secretary of State



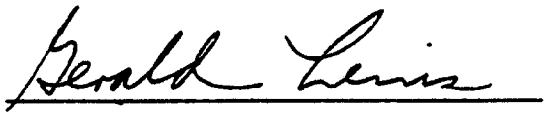
Betty Castor

Commissioner of Education

Attorney General



Commissioner of Agriculture



Comptroller

Treasurer

As and Constituting the State of Florida Board of Trustees of the Internal Improvement Trust Fund

Approved as to form and legality

DNR Attorney

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ST. MARTINS AQUATIC PRESERVE MANAGEMENT PLAN

CHAPTER I

INTRODUCTION

This plan addresses the management of the St. Martins Marsh Aquatic Preserve, located in Citrus County, Florida. This Aquatic Preserve is one of 40 officially designated aquatic preserves in the statewide system (Figure 1). It is comprised of approximately 23,123 acres of sovereignty submerged lands located below the mean high water line. State-owned uplands, including various small islands occurring above the mean high water line are above the jurisdictional line of the preserve, but are encompassed within its general boundary. St. Martins Marsh lies between the city of Crystal River and the town of Homosassa Springs and, it surrounds the town of Ozello.

The St. Martins Marsh Aquatic Preserve boundary (Figure 2) abutts the northern boundary of the Chassahowitzka National Wildlife Refuge to the south and the southerly mean high water line of the Salt River to the north. The western boundary line lies offshore of a chain of islands which includes Sandy Hook, Mullet Key, Bird Keys, Shark Point, Mangrove Point, Long Point, Green Point, Rock Island, Roach Key, Sand Key, Crawl Key, and Homosassa Point. Parts of three rivers lie within the preserve boundaries. These are the Salt River, the St. Martins River and the Homosassa River. In addition, numerous tidal creeks and shallow bays are included within the preserve, and the Crystal River State Reserve is adjacent to the eastern boundary.


AQUATIC PRESERVES
AQUATIC PRESERVES ARE ESTABLISHED BY THE FLORIDA LEGISLATURE AND INCLUDE ONLY STATE OWNED SOVEREIGNTY SUBMERGED LANDS. THE GOVERNOR AND CABINET SITTING AS TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND ARE MANAGERS OF THESE AREAS.
FOR MORE INFORMATION REGARDING AQUATIC PRESERVES CONTACT:
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECREATION AND PARKS
BUREAU OF LAND AND AQUATIC RESOURCE MANAGEMENT
3900 COMMONWEALTH BLVD
TALLAHASSEE, FLORIDA 32303
CREATED BY CAROL A KNOX
1986
FT PICKENS STATE PARK
YELLOW RIVER MARSH
ROCK BAYOU STATE PARK
LAKE JACKSON
ST ANDREWS STATE PARK
ST JOSEPH BAY
APALACHICOLA BAY
ALLIGATOR HARBOR
BIG BEND SEAGRASSES
GULF
ST MARTINS MARSH
RAINBOW SPRINGS
PINELLAS COUNTY
BOCA CIEGA BAY
COCKROACH BAY
TERRA CEIA
LEMON BAY
GASPARILLA SOUND CAPE HAZE
CHARLOTTE HARBOR
MATLACHA PASS
PINE ISLAND SOUND
ESTERO BAY
ROOKERY BAY
CAPE ROMANO 10,000 ISLANDS
MEXICO
FT CLINCH
NASSAU RIVER ST JOHNS RIVER MARSHES
GUANA RIVER
PELLICER CREEK
TOMOKA MARSH
WERTHA RIVER
MOSQUITO LAGOON
BANANA RIVER
INDIAN RIVER MALABAR TO VERO BEACH
INDIAN RIVER VERO BEACH TO FT PIERCE
NORTH FORK ST LUCIE RIVER
JUPITER INLET
LOXAHATCHEE RIVER
BISCAYNE BAY
LIGNUMVITAE KEY
COUPON BIGHT
ATLANTIC OCEAN

Figure 1

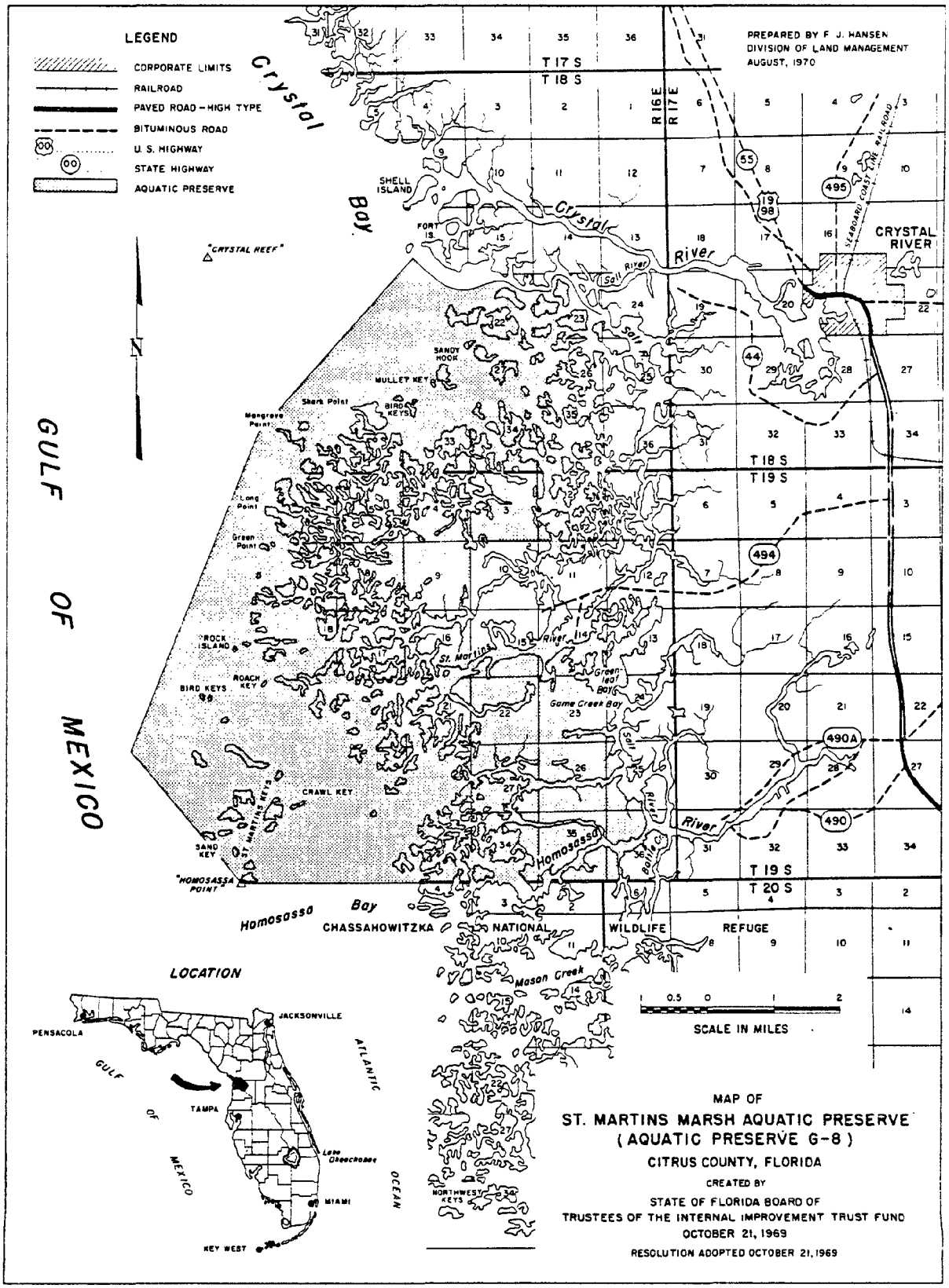
LEGEND
CORPORATE LIMITS
RAILROAD
PAVED ROAD - HIGH TYPE
BITUMINOUS ROAD
U. S. HIGHWAY
STATE HIGHWAY
AQUATIC PRESERVE
PREPARED BY F. J. HANSEN
DIVISION OF LAND MANAGEMENT
AUGUST, 1970
T 17 S
T 18 S
T 19 S
T 20 S
R 16 E
R 17 E
Crystal Bay
GULF OF MEXICO
Homosassa Bay
CHASSAHOWITZKA NATIONAL WILDLIFE REFUGE
CRYSTAL RIVER
"CRYSTAL REEF"
SHELL ISLAND
FORT
SANDY HOOK
MULLET KEY
BIRD KEYS
Shark Point
Mangrove Point
Long Point
Green Point
ROCK ISLAND
ROACH KEY
BIRD KEYS
CRAWL KEY
SAND KEY
ST. MARTINS KEYS
"HOMOSASSA POINT"
St. Martins River
Game Creek Bay
Homosassa River
Salt River
Mason Creek
NORTHWEST KEYS
SEABOARD COAST LINE RAILROAD
494
495
490
490A
44
55
19
98
LOCATION
PENSACOLA
JACKSONVILLE
TAMPA
MIAMI
KEY WEST
Lake Okeechobee
GULF OF MEXICO
ATLANTIC OCEAN
SCALE IN MILES
0.5 0 1 2
MAP OF
ST. MARTINS MARSH AQUATIC PRESERVE
(AQUATIC PRESERVE G-8)
CITRUS COUNTY, FLORIDA
CREATED BY
STATE OF FLORIDA BOARD OF
TRUSTEES OF THE INTERNAL IMPROVEMENT TRUST FUND
OCTOBER 21, 1969
RESOLUTION ADOPTED OCTOBER 21, 1969

Figure 2

This is one of the few essentially pristine preserves in the system. The preserve is not experiencing heavy development pressure at this time, but areas to the east of the preserve are being developed densely.

The administrative support for this management program will be provided by the Department of Natural Resources, Division of Recreation and Park's, Bureau of Land and Aquatic Resource Management (BLARM) in Tallahassee, known as the "central office". Field personnel support and assistance will be provided through the Florida Park Service, Division of Marine Resources and the BLARM staff.

Initially, development of the resource inventory of the preserve has depended heavily on LANDSAT satellite imagery, DOT aerial photography, and on-site inspection. As the program proceeds and on-site managers become more familiar with the area, additional resource information will become available and modifications to the program and the plan will be made where appropriate.

The plan is divided into chapters according to their management application. Chapter II cites the authorities upon which this management program and plan are built. Chapter III (Major Program Policy Directives) highlights the major policy areas that are applicable to this management area. Chapter IV presents a brief resource description.

Chapter V presents the management objectives of both the on-site managers, who actually work in the preserve, and the administrative staff in Tallahassee.

Chapter VI addresses how this plan will interface with local, regional, state, and federal agencies and programs, as well as its relevance to nongovernmental organizations, interest groups, and individuals.

Chapter VII through IX address the various uses, from public to private to commercial. Chapters X and XI address the use of the aquatic preserve for scientific research and environmental education, respectively.

Chapter XII is an internal management improvement section identifying problems and needs in the progressive improvement of this aquatic preserve management plan.

This plan was written by the Department of Natural Resources (DNR), Division of Recreation and Parks, Bureau of Land and Aquatic Resource Management (BLARM) staff. Funding for the plan was provided by a coastal management grant (CM-158) through the U.S. Department of Commerce's National Oceanic and Atmospheric Administration, Office of Ocean and Coastal Resource Management, and the Florida Department of Environmental Regulation's (DER) Office of Coastal Management.

Chapter II

MANAGEMENT AUTHORITY

The primary management authorities available to the staff for implementing management directives affecting aquatic preserves are found in Chapters 258 and 253, Florida Statues (F.S.). These authorities clearly establish the proprietary management overview role of the Governor and Cabinet, sitting as the Board of Trustees of the Internal Improvement Trust Fund and are referred to as both the "Trustees" and the "Board". Furthermore, all management responsibilities assigned to the Trustees by this plan may be fulfilled directly by the Governor and Cabinet or indirectly via staff or agents of the Trustees, pursuant to delegations of authority, management agreements, or other legal mechanisms. All subsequent references to the Board of Trustees should be presumed to potentially include staff and designated agents, in addition to the Governor and Cabinet. The staff of the Bureau of Land and Aquatic Resource Management (BLARM) acting as "agents" for the Trustees, is able to review all requests for uses of, or directly affecting, state-owned sovereignty submerged lands within aquatic preserves. The review and subsequent staff comments are primarily designed to evaluate the environmental consequences of any proposed use of state-owned submerged land. The review is conducted within the confines of the criteria contained in the "maintenance" provisions for aquatic preserves in Section 258.42, F.S. Formal review

comments are provided to the Department of Natural Resource's (DNR), Division of State Lands by the Bureau of Land and Aquatic Resource Management for inclusion in the comments and recommendations accompanying agenda items for Trustees' consideration. This mechanism allows the Trustees, sitting as owners of the land, in trust for the public, to evaluate public interest and project merits within the context of environmental impact upon the preserves.

BACKGROUND

In many respects, the authorities supporting aquatic preserve planning and management are the cumulative results of the public's awareness of the importance of Florida's environment. The establishment of the present system of aquatic preserves is a direct outgrowth of public concern with dredge and fill activities rampant in the late 1950's.

In 1967, the Florida Legislature passed the Randall Act (Chapter 67-393, Laws of Florida), which set up procedures regulating previously unrestricted dredge and fill activities on state-owned submerged lands. That same year the legislature also provided statutory authority (Section 253.03, F.S.) for the Trustees to exercise proprietary control over state-owned lands. In 1967, this governmental focus on protecting Florida's productive estuaries from the impacts of development led to the establishment of a moratorium by the Governor and Cabinet on the sale of submerged lands to private interests. In that same year, this action was followed by the creation of an Interagency Advisory Committee on submerged land management. In late 1968, that committee

issued a report recommending the establishment of a series of aquatic preserves. Twenty-six separate waterbodies were addressed in the original recommendation. Also in 1968, The Florida Constitution was revised, declaring in Article II, Section 7, the State's policy of conserving and protecting the natural resources and scenic beauty of the state. That constitutional provision also established the authority for the legislature to enact measures for abatement of air and water pollution.

It was not until October 21, 1969 that the Governor and Cabinet acted upon the recommendations of the Interagency Advisory Committee and adopted, by resolution, 18 of the waterbodies as aquatic preserves.

Prior to the October 1969 action by the Governor and Cabinet, the Legislature had created the Boca Ciega Bay Aquatic Preserve. Subsequent legislative action in 1972, 1973, and 1974, created the Pinellas County, Lake Jackson and Biscayne Bay Aquatic Preserves, respectively.

In 1975, the Legislature established a Florida Aquatic Preserve Act (codified in Chapter 258, F.S.), thereby bringing all existing preserves under a standardized set of maintenance criteria. Additional acts were passed subsequent to the 1975 action, such as the addition of the Cockroach Bay Aquatic Preserve in 1976 and the Gasparilla Sound-Charlotte Harbor Aquatic Preserve to the system in 1978.

The Charlotte Harbor Aquatic Preserve Management Plan, approved by the Trustees on May 18, 1983, was the first management plan for an aquatic

preserve. The following aquatic preserves have approved plans: Estero Bay- September 6, 1983; North Fork St. Lucie - May 22, 1984; Loxahatchee River- Lake Worth Creek - June 12, 1984; Indian River Lagoon - January 22, 1985; Banana River - September 17, 1985; Indian River-Malabar to Vero Beach - January 21, 1986; Nassau River, St. Johns River Marshes and Fort Clinch State Park - March 22, 1986; Alligator Harbor - September 23, 1986; Terra Ceia - April 21, 1987; Cockroach Bay - April 21, 1987; and St. Joseph Bay - June 2, 1987.

In June 1985, the Legislature passed Senate Bill 762 which expanded the boundaries of the Banana River, Malabar to Vero Beach, Loxahatchee River Lake Worth Creek, Wekiva River and Rookery Bay Aquatic Preserves; and created Guana River Marsh and Big Bend Seagrasses Aquatic Preserves. In June of 1986 the Legislature passed Senate Bill 607 which added the Rainbow Springs and Lemon Bay Aquatic Preserve to the state-side system.

The State Lands Management Plan, adopted on March 17, 1981 and amended July 7, 1981 by the Trustees, contains specific policies. The Plan also establishes policies concerning spoil islands, submerged land leases, "Outstanding Native Florida Landscapes", unique natural features, submerged grassbeds, archaeological and historical resources, and endangered species. All of these issues provide management guidance to the aquatic preserve program.

ADMINISTRATIVE RULES

Chapters 18-21 and 18-20, Florida Administrative Code (F.A.C.), are two

administrative rules directly applicable to the DNR's/Trustees's actions regarding allowable uses of submerged lands, in general, and aquatic preserves specifically. Chapter 18-21. F.A.C. controls activities conducted on all sovereignty submerged lands, and is predicated upon the provisions of Sections 253.03 and 253.12, F.S. The stated intent of this administrative rule is:

"(1) To aid in fulfilling the trust and fiduciary responsibilities of the Board of Trustees of the Internal Improvement Trust Fund for the administration, management and disposition of sovereignty lands;

(2) To insure maximum benefit and use of sovereignty lands for all the citizens of Florida;

(3) To manage, protect, and enhance sovereignty lands so that the public may continue to enjoy traditional uses including, but not limited to, navigation, fishing, and swimming;

(4) To manage and provide maximum protection for all sovereignty lands, especially those important to public drinking water supply, shellfish harvesting, public recreation, and fish and wildlife propagation and management;

(5) To insure that all public and private activities on sovereignty lands which generate revenues or exclude traditional public uses provide just compensation for such privileges; and,

(6) To aid in the implementation of the State Lands Management Plan."

Chapter 18-20, F.A.C. specifically addresses aquatic preserves and derives its authority from Sections 258.35, 258.36, 258.37 and 258.38, F.S. The intent of this rule is contained in Section 18-20.01, F.A.C., which states:

"(1) All sovereignty lands within a preserve shall be managed primarily for the maintenance of essentially natural conditions, the propagation of fish and wildlife, and public recreation, including hunting and fishing where deemed appropriate by the board and the managing agency.

(2) The aquatic preserves which are described in Section 258.39, 258.391, 258.392 and 258.393, F.S.; Chapter 85-345 Laws of Florida; and in Section 18-20.02, F.A.C., were established for the purpose of being preserved in an essentially natural or existing condition so that their aesthetic, biological and scientific values may endure for the enjoyment of future generations.

(3) The preserves shall be administered and managed in accordance with the following goals:

(a) Preserve, protect, and enhance these exceptional areas of sovereignty submerged lands by reasonable regulation of human activity within the preserves through the development and implementation of a comprehensive management program;

(b) To protect and enhance the waters of the preserves so that the

public may continue to enjoy the traditional recreational uses of those waters such as swimming, boating, and fishing;

(c) To coordinate with federal, state, and local management programs, which are compatible with the intent of the Legislature in creating the preserves;

(d) To use applicable federal, state, and local management programs which are compatible with the intent and provisions of the act and these rules, to assist in managing the preserves;

(e) To encourage the protection, enhancement or restoration of the biological, aesthetic, or scientific values of the preserves, including but not limited to the modification of existing manmade conditions toward their natural condition, and discourage activities which would degrade the aesthetic, biological, or scientific values, or the quality, or utility of a preserve, when reviewing applications, or when developing and implementing management plans for the preserve;

(f) To preserve, promote, and utilize indigenous life forms and habitats, including but not limited to: sponges, soft coral, hard coral, submerged grasses, mangroves, salt water marshes, fresh water marshes, mud flats, estuarine, aquatic and marine reptiles, game and nongame fish species, estuarine, aquatic and marine invertebrates,

estuarine, aquatic and marine mammals, birds, shellfish and mollusks;

(g) To acquire additional title interests in lands wherever such acquisitions would serve to protect or enhance the biological, aesthetic, or scientific values of the preserves.

(h) To maintain those beneficial hydrologic and biologic functions, the benefits of which accrue to the public at large."

OTHER MANAGEMENT AUTHORITIES

Other Department of Natural Resources management authorities applicable to aquatic preserves include: fisheries and marine mammal management and protection; beach and shore preservation programs outlined in Chapters 370 and 161, F.S., respectively and land acquisition programs conducted under the Conservation and Recreation Lands Program authorized by 253, F.S.

Chapter 403, F.S., is an important adjunct to Chapters 253 and 258, F.S. This governs, in part, the State's regulatory programs affecting water quality and biological resources. The Department of Environmental Regulation (DER), through a permitting and certification process, administers this program. Section 253.77, F.S., as amended by the Warren S. Henderson Wetlands Protection Act of 1984, requires that any person requesting use of state-owned land shall have approval of the proposed use from the Trustees before commencing the activity. An interagency agreement between DNR and DER provides an avenue for staff comments on potential environmental impacts of projects in aquatic preserves through the DER permitting process.

Additionally, the DER has designated, by administrative rule, a series of water bodies with strigent use criteria called "Outstanding Florida Waters" (OFW). The inclusion of all aquatic preserve waters within this classification greatly enhances the protective provisions of Chapter 258, F.S. As the designated "306" Coastal Zone Management Agency, the DER also provides a source of funding for data collection and planning in areas such as the St. Martins Marsh, as well as being the state agency responsible for implementing "federal consistency" provisions of the federal Coastal Zone Management Act.

The DER's administrative rules of primary significance to the Aquatic Preserve Management Program are Chapters 17-3, 17-4 and 17-12, F.A.C. These rules are based upon the authorities contained in Chapter 403, F.S. Chapter 17-3, F.A.C. addresses water quality standards and establishes the category of "Outstanding Florida Waters", while Chapters 17-4 and 17-12, F.A.C. address permit requirements and dredge and fill activities, respectively.

In December, 1982 a Memorandum of Understanding (MOU) between the DER, DNR, and the U.S. Army Corps of Engineers (COE) was executed. This MOU clearly establishes a process whereby the proprietary concerns of the Trustees, stated in Chapter 253, F.S. can be integrated into the DER/COE joint permit processing system.

Other opportunities for environmental review and input into activities potentially affecting aquatic preserves are afforded by the Department of Community Affairs (DCA), the Withlacoochee Regional Planning Council, and the

Department of State, Division of Historical Resources (DHR). The Executive Office of the Governor also provides a mechanism for public input into federal projects via the State clearinghouse process.

The DCA and WRPC are statutorily responsible for administering the "Development of Regional Impact" (DRI). The DRI program, authorized by Section 380.06, F.S. was established by the Legislature to provide a review and monitoring procedure for those development projects potentially affecting more that one county. Aquatic preserve personnel must not only coordinate with but be conversant of these agencies policies in order to facilitate comprehensive and consistent review input.

Chapter 267, F.S. establishes the state policy regarding preservation and management of Florida's archaeological and historical resources. This responsibility is legislatively assigned to the DHR, which holds title to those cultural resources located on state-owned lands. This also applies to sovereignty submerged lands, including aquatic preserves.

The Citrus County Department of Health and Rehabilitative Services, under their public mandate, administers two programs directly affecting the aquatic preserve management program. These programs are (1) septic tank regulation, usually administered by county health departments and (2) arthropod (mosquito) control programs, usually implemented through local mosquito control districts. Each of these programs holds the potential for creating significant impacts upon the aquatic preserves. Establishment of close

working relationships between the aquatic preserve staff and the Department of Health and Rehabilitative Services will be a necessary element of the aquatic preserves management program.

Each of the above referenced programs may provide an effective means of protecting aquatic preserve and their ecologically sensitive resources.

Chapter III

MAJOR PROGRAM POLICY DIRECTIVES

This plan contains a number of management policy issues. This section highlights those major policy areas that comprise the basic impetus of this management effort. Adoption of these policies will provide specific staff direction for implementing the day-to-day aquatic preserve management program. Major program policy directives are:

(A) Manage all submerged lands within the aquatic preserve to ensure the maintenance of essentially natural conditions to ensure the propagation of fish and wildlife, and public recreation opportunities.

(B) Prohibit the disturbance of archaeological and historical sites within the aquatic preserve, unless prior authorization has been obtained from the Trustees and DHR, and such disturbance is part of an approved research design or authorized project.

(C) Develop a resource inventory and map natural habitat types within the aquatic preserve, with an emphasis on those habitat types utilized by threatened and/or endangered species, and species of special concern.

(D) Protect and, where possible, enhance threatened and endangered species

habitats and species of special concern habitats within the aquatic preserve.

(E) Prohibit development activities within the aquatic preserve that adversely impact saltmarshes and other valuable submerged habitat, unless a prior determination has been made by the Board of overriding public importance and that no reasonable alternatives exist.

(F) Prohibit the trimming and/or removal of saltmarsh vegetation and other natural shoreline vegetation within the aquatic preserve, except when necessitated by the pursuit of legally authorized projects and local protection ordinances.

(G) Provide and actively encourage research and educational opportunities for scientists and other interested researchers within the framework of a planned research program in the aquatic preserve.

(H) Acquire, where feasible, privately owned submerged lands and adjacent lands and islands located within the boundaries of the aquatic preserve pursuant to the authorities contained in Section 253.02(4), F.S.

(I) Prohibit the drilling of oil and gas wells, the mining of minerals, and dredging for the primary purpose of obtaining upland fill within the aquatic preserve.

(J) Prohibit non-water dependent uses of submerged lands within the aquatic preserve except in those cases where the Board has determined that the project

is overwhelmingly in the public interest and no reasonable alternatives exist. This prohibition shall include floating residential units, as defined in Section 125.0106(2), F.S.

(K) Prohibit storage of toxic, radioactive, or other hazardous materials within the aquatic preserve. Any hazardous waste dumps now located within the aquatic preserve should be closed and eliminated.

(L) Prohibit mosquito control practices within the aquatic preserve that require habitat modification or manipulation (i.e. diking, ditching) unless there are no reasonable alternatives and failure to conduct such practices would result in a threat to public health.

(M) Limit pesticide and biocide use within the aquatic preserve to those that are approved by the Environmental Protection Agency (EPA) for wetland and aquatic application.

(N) Prohibit the construction of any deep water ports within the aquatic preserve boundaries.

(O) Prohibit any activity, commercial or recreational, that might impact the integrity of hard bottom communities within the aquatic preserve.

(P) Manage spoil islands within the aquatic preserve as bird rookeries and wildlife habitat areas.

(Q) Encourage public utilization of the aquatic preserve, consistent with the continued maintenance of its natural values and functions.

(R) Develop a well coordinated aquatic preserve management mechanism that recognizes and utilizes local government programs and authorities.

(S) Require, through the efforts of DER and the South West Florida Water Management District (SWFWMD), the maintenance and upgrading of the water quality of the estuary and ensure the natural seasonal flow fluctuations of freshwater into the estuary.

(T) Apply the management criteria contained in the adopted St. Martins Marsh Aquatic Preserve Plan to all subsequent legislative additions of land to the the aquatic preserve.

(U) Encourage the assistance of federal, state, and local government agencies in implementing the aquatic preserve management plans, especially in areas of protection of natural and cultural resources and the enforcement of applicable resource laws and ordinances.

(V) Prohibit Marinas and associated construction activities in Resource Protection Areas 1 and 2.

(W) Identify and document any problems caused by fishing, shellfishing, and collecting activities and report them to the Marine Fisheries Commission.

(X) Insure consistency with the intent of the aquatic preserve designation in the resolution of inconsistencies between the adopted aquatic preserve management plan and any state or local planning processes or plans that may affect the aquatic preserve.

(Y) Recognize that successful shellfish culture and harvesting efforts in the aquatic preserve are dependent upon pollution prevention and abatement and careful comprehensive planning.

Chapter IV

RESOURCE DESCRIPTION

A. Resource Setting

1. Citrus County

The St Martins Marsh Aquatic Preserve comprises an area of approximately 23,123 acres and is located in the west-central section of Citrus County. The preserve is composed of open water, several inlet bays, tidal rivers and creeks, salt marsh, and adjoins upland hammock islands. There are several small springs in the management area, and a portion of the Homosassa River, a spring fed system, lies within the preserve in the southern section. Nutrient exchange between the marshes and the Gulf of Mexico makes the salt marshes a significant area of primary production and a nursery ground for commercial and recreational fish species. The marshes and coastal hammocks are a southern terminus for migratory waterfowl, of the Atlantic and Mississippi flyways, providing wintering and stopover areas for these and other migratory bird species.

The centralized populations of Citrus County are found in the towns of Inverness, with an estimated population of 5,787, and Crystal River, with an estimated population of 3,307 (Vincent Cautero, Citrus County Planning

Division, pers. comm.). The balance of the population is widely distributed in rural areas and in the unincorporated communities of Floral City, Hernando, Citrus Springs, Beverly Hills, Citrus Hills, Homosassa, Homosassa Springs, and Ozello. Citrus County is one of the fastest growing counties in Florida.

The major problems in the continued health of this area include development on private islands within the preserve, pollution from boat and barge traffic associated with the Crystal River Nuclear Power Plant (potential fuel oil spills, for example), and from sewage treatment plants and septic systems outside the preserve.

The resource information presented in this chapter is intended to be generally descriptive of the major management functions and resources of the area surrounding the aquatic preserve.

2. Historic Notes

Citrus County yields evidence of aboriginal Indian inhabitants along its lakes and rivers going back thousands of years. The Crystal River area was a population center for the coastal Timucuan Indians. The Timucuans were apparently wiped out after contact with Spanish explorers. Recently discovered evidence suggest that the Spanish explorer Hernando de Soto traveled through the area in 1539.

Although pioneers first came to this area in the 1820s, it was the Armed Occupation Act of Florida in 1842 which made land affordable and brought about settlements. In 1839, Davis Levy Yulee built his home on the Homosassa River

and established his sugar cane plantation consisting of some 5,100 acres along the banks of the river. During the Civil War, his home on Tigertail Island was destroyed and the sugarmill near Homosassa Springs was damaged beyond repair. (Dunn, 1976).

Citrus County is not a heavily industrialized area. However, it has enjoyed a few industrial booms that have played a major role in its development. The greatest of these booms, centered on phosphate mining, and covered a thirty-year period which started in the last years of the nineteenth century and ran through the first few decades of the twentieth century. This boom helped to develop the outlying regions of the county. Floral City was the focal point of the phosphate mining industry and boasted a population larger than that of newly settled Miami.

Until the freeze of 1894/95, which forced most of the area's groves south, Citrus County was one of the State's major citrus producers. Commercial fishing, ranching, turpentine production, and lumbering were also highly lucrative businesses at the turn of the century. Mills producing first pencils, and then crates operated out of Crystal River.

3. Archaeological Sites

Most of the archaeological sites in the Crystal River area, including those of St. Martins Marsh Aquatic Preserve, are represented by shell middens along the shorelines of the bays and rivers and among numerous coastal islands. These coastal shell midden sites are marked today by the presence of live oaks, hickory, red cedar, and cabbage palms owing to the rich soils of these

sites. In addition to the easily recognizable shell middens, the swamp and marsh much areas adjacent to many of these sites probably contain such normally perishable items as dugout canoes, totems, bowls, and netting. (Florida Department of Natural Resources, 1983).

The nearby Crystal River State Archaeological Site contains the most famous site remains in Citrus County. However, those remains are but a sample of the rich archaeological heritage in the area. This heritage includes sites dating from the Paleo-Indian period (ca. 12,000 - 8,000 B.C.) to historic European-American settlement in the late 1800s to present.

While over 23,000 sites have been recorded in Florida, most of the state has not been subjected to a systematic professional survey to locate and record archaeological and historic sites and properties. Most of the St. Martins Marsh Aquatic Preserve falls into this category. In all, only 10 sites have been identified and recorded with the DHR within the preserve boundaries. There are other sites that have not been registered and probably many more sites that have not yet been discovered due to the undisturbed nature of the preserve. A review of the site distribution data in the Florida Master Site File has indicated that there is a very high probability that such properties are present, particularly in the hammocks bordering the Salt River.

Many archaeological sites have been disturbed or destroyed, and therefore, preservation of any remaining sites is critical.

4. Present Population Characteristics

The growth management concerns of the State of Florida are readily reflected in the Citrus County area. Citrus County is one of the nine counties in the state that have more than doubled their populations from 1970 to 1980. (Marth and Marth, 1985). These counties are: Citrus, Hernando, Charlotte, Clay, Collier, Flagler, Martin, Pasco, and Seminole. Citrus County has a land area of 667 square miles and its current population is estimated at 88,793 persons (Vincent Cautero, Citrus County Planning Division, pers. comm.). This is a density of 133 persons per square mile, compared to a statewide average of 166.3. The county is experiencing unprecedented growth with its population increasing at such a rate that from 1970 to present, the population has increased 340%. It is projected that by the year 2000, the population of Citrus County will not exceed 165,500 requiring 93,500 housing units. (Citrus County, 1987).

5. Coastal Area Land Use and Infrastructure

West-central Citrus County is a moderately developed area containing the city of Crystal River, one of the two relatively large centralized population centers in the county with a current population estimated at 3,307. Other smaller population centers surrounding St. Martins Marsh Aquatic Preserve include Ozello, Homosassa, and Homosassa Springs.

The updated Citrus County Comprehensive Plan designates the area surrounding St. Martins Marsh Aquatic Preserve as Lake and Coastal Zone. Uses defined as consistent with this designation include residential conventional zoning up to

a maximum of one unit per five acres, plus designated industrial and extracted uses. However, uses permitted in areas where traditional zoning is in place (by virtue of recorded or unrecorded subdivisions or vested development) or by Planned Development may be allowed.

Developed areas that directly impact the preserve include Crystal River, Homosassa Springs, and Ozello. Ozello is the only population center lying within the preserve boundaries. Development pressures have been moderate to date and much of the remaining undeveloped land in the area has been proposed for acquisition by the Conservation and Recreational Lands program and Environmentally Endangered Lands. The same is true for the area just north of the Homosassa River. This area is experiencing heavier development pressures than most other sites it the area. In addition to single-family homes on traditional lots, the area is also experiencing single-family high density development, where lot sizes are much smaller than 1/5 acre, resulting in minimum separation of structures. Condominium complexes, as well as commercial marinas, are also being developed along the north bank of this river.

The city of Crystal River and the unincorporated area called Homosassa Springs also directly impact the preserve in the form of wastewater effluent. Florida Department of Natural Resources has identified the Crystal River and Dixie Shores wastewater treatment plants as the worst sources of bacterial pollution along the west coast of Citrus County, and shellfishing areas are regularly closed due to high fecal coliform levels (Packard, 1983). It should also be noted that septic systems with poor drainage probably contribute to the

problem. While these systems do not dump effluent directly into the preserve, the Crystal River plant dumps into the Crystal which feeds into the northern portion of the preserve; the Dixie Shore plant dumps into Dixie Bay and the Salt River which are immediately east of the preserve. In addition to these two plants there are at least thirteen package plants and numerous other septic systems in the immediate area.

B. Natural Systems and their Components

1. Geologic Features and Land Forms

St. Martins Marsh Aquatic Preserve is situated upon the Pamlico Terrace of the Terraced Coastal Lowlands. Within this geological context, the area falls within the "coastal marsh belt" and "limestone shelf and hammock" physiographic zones (Vernon, 1951).

The land within the Terraced Coastal Lowlands is described as rocky, consisting of fractured limestone, with rock pinnacles and surface outcrops of limestone commonly observed. Sandy mud marshes occupy the lower sections of the area and are bounded on the interior by limestone outcrops.

The limestone shelf often extends into the coastal marsh areas in the form of peninsulas and islands, and supports hammock and flatwood habitat types, with their attendent ponds and swamps. The extensively fractured shelf is directly connected to the artesian aquifer in this area, resulting in the proliferation of springs that discharge clear ground water.

Soils of the St. Martins Marsh Aquatic Preserve are primarily those of the Salt Water Marsh association. These soils are described as near sea level, very poorly drained soils subject to prolonged or frequent flooding (Florida Department of Administration, 1975). The soils can be further described as being of the Homosassa-Weekiwachee-Lacoochee association consisting of near sea level, very poorly drained organic and mineral soils and poorly drained, thin, sandy soils over limestone subject to frequent tidal flooding (United States Department of Agriculture, 1977). Soils of the island hammocks are predominately Aripeka fine sand. Both these soils types are listed as having severe limitations for building site developments, sanitary facilities, and use as construction material.

2. Community Associations

The plant communities of the St. Martins Marsh Aquatic Preserve are a major factor in the continued health and productivity of the natural systems within the Preserve. This Preserve is unique in that it represents a transitional zone between temperate and tropical. As such it contains a mixture of species characteristic of both zones. This section will also reference some of the animal species associated with these plant communities. The major community associations recognized in the preserve are salt marsh, oyster reef, tidal flats, marine grassbeds, mangrove forest, and hammock islands. Each community is presented separately although the communities are often intermixed and energetically interdependent.

A. Salt Marsh. The salt marsh community is one of the major components of this aquatic preserve. These shallow, sheltered marsh areas are crisscrossed

with numerous sediment-laden tidal creeks and channels. The inflowing rivers contribute dissolved organic nutrients (e.g. phosphates and nitrates) and detrital material to the marshes. The incoming tides bring in other nutrients of marine origin. Tides and currents circulate the material within the system creating year-round high primary productivity in the order of 2500 $g/m^2/yr$ (Smith, 1980). Outgoing tides carry broken down plant material from the marshes, thereby enriching nearshore environments.

Zonation of plant species within the salt marsh is dependent on tidal flooding and salinity. In the St. Martins Marsh Aquatic Preserve, the dominant species are black needle rush (Juncus roemerianus) in the high marsh (between mean high water and mean high water spring tide), salt grass (Distichlis spicata) in many areas, and smooth cordgrass (Spartina alterniflora) which occurs in open lower marsh fringes (between mean low water and mean high water).

Other plant species associated with the salt marsh include Christmasberry (Lycium carolinianum) salt meadow hay (Spartina patens), sea oxeye (Borrichia frutescens), marsh elder (Iva frutescens), Virginia dropseed (Sporobolus virginicus), dwarf buttonwood (Conocarpus erecta), sea lavender (Limonium carolinianum), and glasswort (Salicornia virginica).

The animal life of the salt marsh is rich and diverse. It includes primary consumers that feed on vascular plant detritus and live algae, such as amphipods, fishes, shrimp, crabs, clams, oysters, snails, and worms. Animals like the rice rat and cotton mouse nest within the marsh, but others, like the raccoon, marsh rabbit and opossum come down to the marshes primarily to feed

during low tides. Avian species such as clapper rails, willets, red-winged blackbirds, seaside sparrows, and marsh wrens nest in the salt marshes. Herons, egrets, ibis, wood storks, and other wading birds feed on the mud flats and at the edges of the marshes. Numerous fish species of commercial and recreational importance either spawn in the marsh, or live there for a large part of the their life cycles.

B. Oyster Reefs. Oyster bars are common in the low-energy, sediment rich environment characteristic of the strands of salt marsh occurring within the preserve. Typically, oysters colonize subtidal and intertidal portions of the estuarine system. The oyster reefs are stable islands of substrate in an otherwise muddy environment and can affect local turbidity levels through the process of filtration and deposition. As the reef grows and traps sediment, it may eventually become colonized by Spartina.

The extensive surface area of an oyster reef provides essential habitat for many animals, especially sessile suspension-feeding epifauna such as barnacles, sponges and polychaetes. The crevices also provide a refuge for motile invertebrates like mud crabs and amphipods. One of the functions of the reef inhabitants in a salt marsh ecosystem is to mineralize organic carbon and release nitrogen and phosphorous in forms usable by the primary producers.

Predators on this community include the blue crab, mud crab, sheepshead minnow, raccoon, and numerous wading birds such as the white ibis and boat-tailed grackle.

Oysters are especially susceptible to chemical pollution and high levels of turbidity. Dredging activities can greatly increase turbidity levels, increasing natural sediment loads, and depleting dissolved oxygen. High coliform levels have temporarily closed shellfish harvesting areas in St. Martins Marsh in recent years.

C. Tidal Flats. Tidal flats in the preserve consist of intertidal mud flats associated with the tidal creeks and channels of the salt marsh. Tidal flats in these areas are relatively stable and sediments can support a substantial benthic community.

Bacteria present in the sediments efficiently convert dead organic material to inorganic nutrients which are then available to support primary production. Algae are abundant on and in the sediments of intertidal flats where they are important primary producers. The intertidal zone is a harsh environment where inhabitants are subjected to varying degrees of temperature, salinity and dessication. Most organisms have adapted to this by burrowing (protozoans, polychaetes, amphipods, bivalves), or by feeding on the flats only during times of inundation (crabs, gastropods, shrimp, fish). Birds are the most conspicuous predators in this habitat. Some of the more common species include waders, such as herons and egrets, probers, such as plovers, sandpipers, and dowitchers, and aerial-searching birds, such as terns and gulls.

D. Marine Grassbeds/Algal beds. The tidal creeks, bayous, and shallow Gulf waters between the marsh and the islands are well vegetated by seagrasses such

as turtle grass (Thalassia testudinum) and shoalgrass (Halodule wrightii and Ruppia maritima). Seagrasses may be found in monospecific or intermixed strands. Other marine plants associated with these areas include seagrass species of Halophila and algal species of Caulerpa and Sargassum . The waters of the inner marsh exhibit exceptional clarity, rivalling that of the Florida Keys, and in these areas the bottom is carpeted with lush stands of grasses and algaes.

Seagrass communities play an integral role in the cycling of nutrients in an estuarine environment. As primary producers, they are eaten by urchins, conchs, fishes, birds, green turtles, and the endangered West Indian manatee (Trichechus manatus). The detrital remains of seagrasses and fecal deposits serve as the primary food source for bottom filter feeders. These invertebrates in turn are consumed by fish and other marine organisms higher up the food chain. Seagrasses also provide attachment sites for many forms of epiphytic algae that may be consumed by small fish and juvenile shrimp (Zeiman and Wetzel, 1980).

Seagrass blades provide a baffling effect that slows water currents, trapping nutrients and sediments. The roots and rhizomes bind the sediment, thus promoting the building of an organic substrate which encourages a diverse meiofauna. The dense strands of seagrasses provide shelter for many fish species. With the loss of seagrass beds, a reduction in the availability of food throughout the community results.

Much of the loss of seagrasses can be attributed to dredge and fill

activities. In Florida, 25,000 acres of submerged land have been filled. The majority of the fill occurred in the creation of land for residential and industrial development (Zieman, 1982). Even if the fill is not deposited directly on the grassbeds, they are often adversely affected through increased turbidity. The unconsolidated particles of sediment are continually resuspended in the water column so recolonization by seagrasses in inhibited. Propeller cuts also cause extensive damage to the grassbeds. The shallow waters of the St. Martins Marsh Aquatic Preserve appear to be experiencing this type of damage. Commercial and recreational boating in areas with insufficient bottom clearance results in prop cut channels in many areas. Commercial fishermen often run the same routes in search of fish, and this repeated traffic over damaged areas inhibits recolonization.

E. Mangrove Forest. The marshy wetlands of the preserve are first fringed with and gradually become dominated by mangroves as one proceeds from east to west. Black mangroves (Avicennia germinans) tend to dominate most of the mangrove communities because of their resistance to freezes. Red mangroves (Rhizophora mangle) form a small understory or fringing thicket. Further offshore, red mangroves become larger and more dominant. The zonation of the mangrove species, black mangroves shoreward of red mangroves, is a result of tidal inundation and saline conditions of the soil. Citrus County is outside the area normally considered as the limit for extensive mangrove forests on the west coast of Florida. The annual occurrence of freezes gives the mangroves of the St. Martins Marsh Aquatic Preserve a stunted growth pattern and limits their distribution. The recent freezes of 1984/85 killed virtually all of the red and black mangroves in this area. Recent field surveys indicated that the red mangroves are regenerating from propagules (seeds).

The dominant mangrove forest type in the preserve is the "fringe" forest. This type of mangrove forest is characterized by growth on mainland shorelines of gradual slope, exposure to tides but not daily overwashed, sluggish internal water flow on high tides with minor to no scouring, and export of particulates as well as labile organic matter (Lugo and Snedaker, 1974).

The mangrove community is a highly productive system. The prop roots and drop roots of the red mangrove and the pneumatophores of the black mangrove trap sediments and nutrients thus providing a rich food source for benthic, planktonic, and nektonic communities. Leaf fall from mangroves also adds another detrital food source to the system. Mangrove communities filter land runoff, stabilize substrate, and provide attachment sites for many algal species. The high level of nutrient availability, coupled with the surface area of the mangroves both above and below water, provides nursery and rookery habitat for small fish, invertebrates, and birds.

F. Hammock Islands. The St. Martins Marsh Aquatic Preserve surrounds state-owned uplands within the preserve boundaries. These uplands consists mainly of hammock islands, both large and small. Since many of these state uplands and islands occur above the mean high water line, they are technically excluded from the preserve boundary. However, due to their location in relationship to the preserve's general boundary (submerged lands located below the mean high waterline), any activities on these uplands/islands will be monitored by the preserve management program for impacts on the preserve. Most state-owned uplands within the preserve occur in the northern portion in Township 18 South and Range 16 East. Additional

purchases have been proposed that if approved, will give the State control over much of the upland areas within and surrounding the preserve. This will immeasurably enhance the management capabilities of the State and aid in protecting the water quality and viability of the preserve.

Many of the smaller islands are dominated by red cedar (Juniperus silicicola) and cabbage palm (Sabal palmetto). These islands are found scattered throughout the Juncus marsh. Rising sea level and/or storm tides have apparently taken their toll on some of the islands as is evident by some islands consisting of almost all dead trees. The larger islands support a more varied flora including Coontie (Zamia pumila), live oaks (Quercus virginiana), cactus (Opuntia sp.), Spanish bayonet (Yucca aloifolia), Yaupon holly (Ilex vomitoria), Florida privet (Forestiera segregata), and poison ivy (Toxicodendron radicans).

3. Animal Life

The diverse habitat and its proximity to state reserve lands and the Chassahowitzka National Wildlife Refuge makes St. Martins Marsh Aquatic Preserve an exceptional area for a wide variety of wildlife species. The salt marsh, seagrass beds and mangroves also provide a refuge for animal species utilizing the area during migrations and during times of environmental stress (i.e., drought and storm).

On the nearby Chassahowitzka National Wildlife Refuge, (an area of 30,500 acres of coastal saltwater bays, estuaries, and brackish marshes similar to St. Martins Marsh in size and habitat), 255 species of birds, over 40 species

of reptiles and amphibians, and more than 25 species of mammals have been recorded (United State Department of Interior, 1983). In environmental studies performed for the Crystal River Nuclear Power Plant, 64 species of marine fishes were recorded, and 78 species of benthic invertebrates were found in the marine environments surrounding the sites (Florida Power Company, 1971). This area is approximately five miles north of the preserve. Wildlife species that are designated as endangered or threatened by either USFWS or FGFWFC, and that are likely to occur in St. Martins Marsh, are listed in table 1. For management of designated animal species in the aquatic preserve, the Florida Game and Fresh Water Fish Commission (list published in 39-27.03-.05., Florida Administrative Code) is the primary reference source.

One of the most visible and highly publicized endangered species which occurs in the preserve is the manatee. The Crystal and Homosassa rivers are the center of a winter warm water refuge for this slow moving aquatic mammal. The Crystal River and Homosassa populations are comprised of approximately 150 individuals, of which 90% return annually to the springs. This is one of the few sub-populations that has been growing in recent years. The Preserve is particularly important to the manatees as feeding territory, and they are sighted most often in the northern part of St. Martins Marsh near the mouth of the Salt River.

This is one of the only areas in Florida where the manatee is of economic importance to a local community. The thriving dive business of Crystal River can largely be attributed to the presence of manatees, as well as to the clear spring-fed waters of King's Bay.

TABLE I. Designated wildlife species likely to occur in St. Martins Marsh Aquatic Preserve

COMMON NAME	SCIENTIFIC NAME	LISTING	FGFWFC	USFWS	CITES
BIRDS					
Arctic peregrine falcon	Falco peregrinus tundrius		E	T	I
Cape Sable seaside sparrow	Ammodramus maritimus mirabilis		E	E	
Scott's seaside sparrow	Ammodramus maritimus penisulae		SSC		
Limpkin	Aramus guarauna		SSC		
Marian's marsh wren	Cistothorus palustris marianae		SSC		
Little blue heron	Egretta caerulea		SSC		
Snowy egret	Egretta thula		SSC		
Louisiana heron	Egretta tricolor		SSC		
Pigeon hawk	Falco columbarius				II
Southeastern kestrel	Falco sparverius paulus		T	UR2	II
Bald eagle	Haliaeetus leucocephalus		T	E	I
Wood stork	Mycteria americana		E	E	
Brown pelican	Pelecanus occidentalis		SSC		
Least tern	Sterna antillarum		T		
MAMMALS					
Florida panther	Felis concolor coryi		E	E	I
Florida black bear	Ursus americanus floridanus		T*	UR2	
West Indian manatee	Trichechus manatus latirostris		E	E	I
River otter	Lutra canadensis				II
Bobcat	Lynx rufus				II
Florida mink	Mustala vison lutensis			UR2	
Homosassa shrew	Sorex longirostris eionis		SSC	UR2	

REPTILES				
Atlanitc ridley turtle	Lepidochelys kempi	E	E	I
Atlantic green turtle	Chelonia mydas mydas	E	E	I
Leatherback turtle	Dermochelys coriacea	E	E	I
American alligator	Alligator mississippiensis	SSC	T(S/A)	II
Eastern indigo snake	Drymarchon corais couperi	T	T	
FISH				
Common snook	Centropomus undecimalis	SSC		

*Not applicable in Baker and Columbia counties and Apalachicola National Forest

KEYS TO LISTINGS

FGFWFC = Florida Game and Freshwater Fish Commission

USFWS = United State Fish and Wildlife Service

CITES = Convention on International Trade in Endangered Species of Wild Fauna and Floras

E = Endangered

T = Threatened

T(S/A) = Threatened Due to Similarity of Appearance

I = Appendix I Species

II = Appendix II Species

UR2 = Under review for listing, but substantial evidence of biological vulnerability and/or threat is lacking.

SSC = Species of Special Concern

Adapted from Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida (Florida Game and Freshwater Fish Commission July 1, 1987) and Rare and Endangered Biota of Florida (University Presses of Florida, 1978).

There are currently no protected areas, under Chapter 16N-22 of the Florida Manatee Sanctuary Act, within the St. Martins Marsh Aquatic Preserve. Manatee management policies are addressed in Chapter V.

A majority of marine species important to man are linked to the estuarine environment. It has been estimated that up to 97.5% by weight of the commercial fishery resources in the Gulf of Mexico and over 90% of the sport or recreational species in the United States depend upon estuaries during all or part of their life cycle (Comp, 1985). In Florida, at least 72% of the 90 commercially landed species of finfish and shellfish, and 74% of the 84 recreational species are estuarine dependent (Durako, et al., 1985). Estuaries serve as nursery grounds for invertebrates and fish species by providing food, shelter, and refuge from predation.

In addition to the common snook (Centropomus undecimalis), a species of special concern, the redfish or red drum (Sciaenops ocellata) also occurs within the preserve. Current regulations for the taking of these species will be made available to the general public through the preserve staff. Updated regulations will be obtained through the local Marine Patrol office and all staff will become familiar with the most recent versions.

Sitings of all designated species will be recorded and monitored, with every effort made to substantiate sightings of endangered, threatened, and species of special concern.

Chapter V

RESOURCE MANAGEMENT

A. Introduction

The main objective of the resource management plan in the aquatic preserve is to protect the resources of the aquatic preserves for the benefit of future generations (Section 258.35, F.S.). The management of this preserve will be directed toward the maintenance of the existing or essentially natural conditions and the restoration of degraded areas. This part of the management plan addresses the policies and procedures which the onsite and administrative personnel will pursue. The onsite management will involve DNR's field personnel assigned to the aquatic preserve. The administrative management will involve Division of Recreation and Park's personnel (both in the field and in Tallahassee) and the Division of State Lands' personnel, cooperating in the review of applications for use of state-owned lands and related activities surrounding the preserve. These personnel will be interacting with various government and non-governmental entities, interest groups and individuals.

B. Onsite Management Objectives

The onsite management objectives are reflected in the activities that the field personnel become involved in (i.e., observation, research, public interaction, emergency responses, etc.) to protect and enhance the resources

within the Aquatic Preserve. Other activities, such as the interaction with other government and nongovernmental entities, are covered in more detail in Chapter VI (Management Implementation Network). The field personnel's duties are, with respect to management of the various uses of the aquatic preserve, addressed in more detail in Chapters VII through XI. The field personnel will generally be involved in all management activities concerning the St. Martins Marsh area.

1. Plant Communities

The communities of aquatic and wetland plants within the Preserve perform five major functions vital to the health and productivity of the estuarine system.

a. they stabilize geologic features such as beaches in the face of dynamic forces (i.e., currents, tides, winds, and waves), which often act in concert to both erode and deposit;

b. they create, from recycled nutrients and solar energy, the organic material that fuels the estuarine food web which support the area's fisheries, endangered species, migratory waterfowl, colonial waterbird nesting colonies, raptors, marine mammals, and marine and estuarine invertebrates;

c. they provide protected fisheries habitat for spawning and juvenile development, many of which are of economic importance to the commercial fisheries of the state and the nation;

d. they provide roosting and nesting habitat for water birds; and,

e. they physically buffer estuarine and riverine waters from contaminated and channelized runoff from uplands within the estuarine watershed and, in some cases, buffer the uplands from storm waves and winds.

The management objectives for plant communities will be to maintain and enhance these functions. Because these plant communities are critically important to the well-being of the Preserve, a program to work toward the protection and restoration of those communities now damaged or destroyed by human activities should be developed.

Management Policy

a. Field Familiarization and Documentation. Field personnel will become familiar with the plant species and communities present in the aquatic preserve, and locations of their occurrences. Field maps will be updated on a bi-yearly basis.

b. Literature Familiarization. Field personnel will continue to assemble a working library of existing pertinent literature concerning the species and communities present in the aquatic preserve. Staff will become familiar with the ranges, life histories, ecological requirements, productivity, importance to water quality, contribution to landform stabilization, wildlife habitat provision, fisheries habitat provision, and fisheries food production of the plant communities within the aquatic preserve.

c. Preparation of Guidelines for Management of Endangered Species. Field personnel, with the help of the scientific community, personal field observations and literature reviews, will develop maps (using 7.5 minute quadrangles or other appropriate scales) showing the locations of threatened and endangered plant species within the aquatic preserve. A set of management guidelines for each species, outlining the habitat requirements and the methods to sustain and/or restore these habitats will be developed. Field personnel, in the course of documenting the occurrence of threatened and endangered animals, will develop maps showing the locations and types of plant communities used by these animals for nesting, roosting, feeding, resting, spawning, etc. Guidelines for maintaining or restoring habitat essential to each species will then be developed using all appropriate scientific resources available.

d. Monitoring of Plant Communities for Natural Changes. Field personnel will become familiar with the use of aerial photography and LANDSAT imagery, for the study and monitoring of plant communities (historical and present) and will use this remote sensing in conjunction with field observations to monitor and document natural changes such as:

1. freeze damage to, and recovery of, mangrove communities;
2. wind and wave damage to mangrove communities from storms and hurricanes;
3. accretion-related seaward extension of mangrove communities;
4. erosion-related landward retraction of mangrove communities;
5. depositional burying of marine grassbeds communities;
6. invasions of exotic plant species and revegetation by native species after exotic plant removal projects;

7. pathogen damage to and recovery of plant communities;

e. Identification of Areas and Communities in Need of Restoration. Field personnel will, in conjunction with their resource mapping, systematically survey the aquatic preserve to determine the location, nature, and extent of environmental damages from human activities and assess the possibility of restoring each site according to whether the site is publicly or privately owned, and the cost and effort required.

f. Protection of Plant Communities. Field personnel shall protect the plant communities from the various uses within the aquatic preserve according to the following guidelines.

1. Field personnel in their biological reports shall not recommend for approval any proposed use of submerged lands when the plant communities in the proposed use area appear to be jeopardized.

i. Pruning of mangroves shall only be permitted for minimum access from the mean high water line to a dock or pier. The destructive clearing of mangroves in the preserve shall be strictly prohibited.

ii. Marine grassbed communities shall not be removed or shaded to such an extent as to cause the death of a significant area of the community. They shall not be subjected to unacceptable turbidity, decreased light penetration, propeller or net damage.

2. Field personnel shall be notified of applications for uses of submerged lands within the aquatic preserve by the Bureau of

Land and Aquatic Resource Management (BLARM) central office. No applications will be approved within any Resource Protection Areas 1 and 2 (see section C of this chapter) without a thorough review by the field personnel. The field personnel will inspect the site, assess the potential impact to the plant communities, and then convey their recommendations to the central office as required.

3. Field personnel will initiate various educational programs and supplement existing educational programs designed to increase public awareness of the damage that recreational, private and commercial uses (i.e., propeller damage) can inflict on marine grassbed communities. Educational programs can also be undertaken with other federal, state or local groups (i.e., Florida Sea Grant, Citrus County Marine Science Center, school boards, etc.).

4. Field personnel will develop an exotic plant control and removal plan after monitoring the rate and extent of invasion by exotic species, such as Brazilian pepper and Australian pine.

5. In cooperation with the Citrus County Planning Division, and the Withlacoochee Regional Planning Council, field personnel will familiarize themselves with the Citrus County Comprehensive Plan, the Withlacoochee Comprehensive Regional Policy Plan, and the federal 'Coastal Zone Management Act' so as to assess the potential impacts of oil spills or natural castastrophe on the natural resources of St. Martins Marsh.

g. Restoration of Plant Communities. Guidelines will be developed for restoring damaged marine grassbeds in the Aquatic Preserves where it is determined that artificial restoration is the appropriate method. Consultation with professionals in the wetlands restoration/vegetation field will be conducted to determine the location of stock sources of marine grasses outside the Aquatic Preserve boundaries and the advisability of transplanting marine grasses into the preserve to restore damaged grassbeds. The use of marine grassbeds within the Aquatic Preserve as a stock source for transplanting and restoring is prohibited due to the risk of a net loss to the overall community. Research Projects designed to foster habitat rehabilitation and improvements shall be considered on a case-by-case basis. Research projects may be approved after a finding by the Board that the project will result in a net positive benefit to the preserve.

h. Identification of Research Needs. Field personnel will identify research needs concerning plant communities within the aquatic preserve. Special emphasis will be given to research which will provide data that increases the capability of field personnel to manage plant communities. Immediate research needs include how plant communities respond to environmental stress. Included in this study should be a determination of how threshold tolerances of plant community health and diversity are related to degraded environmental conditions.

i. Coordination with Other Researchers. Field personnel will become familiar with research projects being conducted within the aquatic preserve by state and federal agency biologists and non-government researchers. Personnel will

coordinate, assist and encourage research projects by the faculty, graduate, or undergraduate students at the research facilities in the area (University of South Florida, University of Tampa, Eckerd College, Hillsborough Community College, New College in Sarasota, Mote Marine Lab, University of Florida and Central Florida Community College). Water quality research issues, as they affect plant communities, should also be closely followed. This familiarization should lead to a better understanding of both agencies' personnel and a better awareness of the data finding and uses. The research liaison will also be addressed in Chapter X (Scientific Research).

2. ANIMAL LIFE

The richness of the animal life in the St. Martins Marsh area was an important factor in its designation as an aquatic preserve. The fish, shrimp, and crabs within the aquatic preserve, both in the estuary and offshore, are valuable resources on which recreational and commercial fisheries depend. Large areas of undisturbed wetlands are excellent habitat for many types of wildlife. These wildlife include an extensive list of endangered, threatened, or species of special concern habitats, migratory waterfowl, colonial waterbirds, invertebrates and vertebrates.

Management objectives for the fauna within the aquatic preserve will be focused on the protection through preservation or restoration of habitats within the preserve.

Management Policy

a. Field Familiarization and Documentation. Field personnel will become familiar with the major animal species in each habitat in the aquatic preserve. This identification process will include the location, number, season of sighting, weather conditions and any other factors which may be necessary to build a working knowledge of the species, and their interaction and occurrence in the aquatic preserve.

b. Literature Familiarization. The field personnel will continue to assemble a working library of existing pertinent literature concerning the animal species and communities present in the aquatic preserve. Staff will become familiar with the ranges, life histories, ecological requirements, position in the community, habitat and other factors necessary for sound management.

c. Preparation of Guidelines for Management of Designated Species. Field personnel will become familiar with the guidelines of the Florida Game and Fresh Water Fish Commission, U.S. Fish and Wildlife Service, Department of Natural Resources' Division of Marine Resources, National Marine Fisheries Service, Marine Fisheries Commission, and any other applicable agencies and non-governmental organizations involved in the management of endangered or threatened species, species of special concern and their habitats. These guidelines will be used in conjunction with the field familiarization, documentation, and mapping to develop management guidelines for each species, outlining their habitat requirements. Field Personnel, in the course of documenting the occurrence of threatened and endangered animals, will develop

maps showing the locations and types of plant communities used by these animals for nesting, roosting, feeding, resting, and spawning, etc. Literature information and personal observations will then be used to develop guidelines for maintaining (or restoring if necessary) the "critical habitat" required by each species.

d. Manatee Management. When application for the use of submerged lands within the aquatic preserve or adjacent upland activities will affect a manatee sanctuary, critical manatee habitat, or manatees known to use an area, field personnel will notify the State Manatee Coordinator. These applications or activities will require the coordinator's authorization and approval before they can be recommended by BLARM. Field personnel will also work with the coordinator in the practice and procedures of the following activities:

i. Monitor the preserve for manatee activities and maintain a manatee sighting map for the preserve. This mapping will take special note of large seasonal aggregations. A manatee reporting and data collection system will be established and will make use of other governmental personnel and private individuals where possible.

ii. Identify and map shallow water and narrow areas where manatee boat/barge collisions are more likely.

iii. Identify any other areas for additional manatee sanctuaries, special channel marking, and slow speed zones.

iv. Application for use of submerged lands will be reviewed for design and operation that are least dangerous and disruptive to manatees. Approved uses within manatee areas should require manatee caution signs and any other requirements that will guarantee manatee health and safety.

v. The creation of new marinas and multiple slip residential docking facilities is prohibited in manatee sanctuaries and severely limited in identified manatee use areas.

vi. The creation of canals and basins within or contiguous to manatee sanctuaries shall be prohibited.

vii. Assist local governments in the incorporation of manatee issues into their marina siting elements.

viii. Schedule and monitor activities within manatee use areas during seasons of lowest use.

ix. Assist in public awareness education efforts.

e. Monitoring Changes in Animal Populations. Field personnel will study and monitor changes in animal species that are caused by natural phenomena, such as:

i. freezes;

ii. storms and hurricanes;

iii. changes in habitat due to changes in plant types;

iv. changes in habitat due to water quality changes; and

v. geologic or hydrologic changes including erosion, estuarine current flow changes, and any other physical changes.

f. Protection of Animal Life from Human Uses of the Aquatic Preserve. The protection of animal species shall be considered when reviewing applications in or affecting the preserve. The reviewer shall also consider the potential effects of the proposed use on plant communities that function as habitat for the animal life. Disturbances that alter or hinder the natural activities and functions of the animal species living within the preserve (e.g., air

pollution, excessive noise or bright lights affecting a bird rookery), shall also be analyzed and concerns addressed in the permitting process. Field personnel will be notified of any proposed activities (e.g., seismic testing, mammal capture by permit) within the aquatic preserve that might affect the well-being of animal life, and personnel should be involved in planning the activity so as to cause the least amount of stress on animal life.

g. Identification of Research Needs. Field personnel in the course of their duties shall identify research needs required to improve the management of animal life in the aquatic preserve. This identification process is more fully described in Chapter XII (Identified Program Needs).

3. GEOLOGIC FEATURES

The management of geologic features will require that the field personnel become aware of the natural geologic features and the changes, both human and natural, which affect these features within the aquatic preserve. This knowledge should strengthen the review process for applications on state-owned land as they might affect these features. These geologic features will include inlets, islands, shoals, shorelines, embayments, and channels. The overall objective of the management of these features is to allow the naturally dynamic system to operate without man's influence or interference. Active management in this area shall include the review of proposed uses that might affect the geologic features within the aquatic preserve. The majority of these reviews will probably concern bulkheads, revetments, groins, dredge and fill, bridges and channels as they might affect state-owned lands. Bulkheads are not allowed within the preserve, except as stated in Sections

258.42(2), and 258.44 F.S. and in accordance with the management objectives of the preserve. Bulkheads placed upland of the aquatic preserve shall be constructed following the natural contour of the shore. Drainage patterns will be maintained or shall only be minimally altered. The use of rip-rap with mangroves or other suitable native plantings are always preferable to bulkheads. Management will make every effort to educate the public about the economic and environmental advantages of vegetated shorelines.

Existing bridges and causeways throughout the state have resulted in losses of grassbeds, mangroves and the degradation of the water quality. Causeways restrict natural flushing and create unnatural circulation patterns. Proposals for bridge and causeway construction within the preserve will be reviewed in light of these potential impacts.

The only existing dredged channel located in the St. Martins Marsh Aquatic Preserve is the "Homosassa River Channel" and is located on the southeastern portion of the preserve in Sections 35-36 of Townships 19S Range 16E. The length within the preserve is approximately two miles and meanders southwestward. The U.S. Fish and Wildlife Service has indiciated that this channel is critical habitat of the endangered manatee. It is unlikely that future maintenance dredging will be performed (Mr. R.W. Clutter, U.S. Army Corps of Engineers Cyrstal River, pers. comm.). Channel dredging has adversely impacted other waterways, with varying influences, depending on channel location and current. Proposed channel dredging will be reviewed in light of these past experiences.

Field personnel shall also be involved in the review of project proposals submitted to other agencies, such as the U.S. Army Corps of Engineers, Department of Environmental Regulation, the Department of Transportation or the Southwest Florida Water Management District, and shall formally review and comment on any permit application that impacts the aquatic preserve. These projects shall be reviewed jointly with those agencies' personnel whenever possible. Field personnel will review these projects and act as advocates on behalf of the aquatic preserve and its resources.

4. ARCHAEOLOGICAL AND HISTORICAL SITES

Archaeological and historical sites have several characteristics which must be recognized in a resource management program.

i. They are a finite and non-renewable resource.

ii. Each site is unique because individually it represents the tangible remains of events which occurred at a specific time and place.

iii. While these sites uniquely reflect localized events, these events and the origin of particular sites are related to conditions and events in other times and places. They also preserve traces of past biotic communities, climate, and other elements of the environment that are of interest to both the scientific community and the general public.

iv. These sites, particularly archaeological sites, are very fragile because their significance is derived not only from the individual artifacts within them, but especially from the spatial arrangement of those artifacts in both horizontal and vertical planes.

Administering Agency

The management of the archaeological and historical sites is authorized and administered by the Division of Historical Resources, (DHR) in the Florida Department of State. The management authority for these resources is presented in Chapter II (Management Authority).

Management Policy

The management policy presented here is one of conservation, as recommended by the DHR and subject to the agency's changes. Their policy is as follows:

1. The field personnel and all other agencies planning activities within the aquatic preserve shall coordinate closely with DHR in order to prevent any unauthorized disturbance of archaeological and historical sites that may exist on the affected tract. DHR is vested with the title to archaeological and historical resources abandoned on state lands and is responsible for administration and protection of such resources (subsection 267.061(1)(b), F.S.). It is illegal to destroy or otherwise alter sites on state lands without a permit from DHR (Section 267.13, F.S.). Therefore, agencies planning activities should coordinate their plans with DHR at a sufficiently early stage to preclude inadvertent damage or destruction to these resources.
2. The nature of these sites' fragility and vulnerability to looting and other destructive forces requires that the location of these sites not be widely known, if the location is known at all. In many instances DHR will have knowledge of the known and expected site

distribution in an area. Special field surveys for unknown areas may be required by DHR to identify potential endangerment of a proposed activity to these archaeological and historical sites. This will be especially necessary in the case of activities contemplating ground disturbance over large areas.

3. In the case of known sites, activities that are expected to alter or damage these sites shall alter their management or development plans as necessary, or make special provisions so as not to disturb or damage such sites prior to professionally acceptable and authorized mitigation.
4. If in the course of a management activity, or as a result of development of the permitting of dredge/fill activities, it is determined that valuable historical or archaeological sites will be damaged or destroyed, DHR reserves the right to require salvage measures to mitigate the destructive impact of such activities on such sites (subsection 267.061 (1) (b), F.S.). Such salvage measures shall be accomplished before DHR would grant permission for site destruction.
5. Excavation of archaeological sites in the near future is discouraged. Archaeological sites within the aquatic preserve should be left undisturbed for the present, with particular attention devoted to preventing site looting by "treasure hunters".
6. Field personnel will note suspected sites for future surveys by DHR. Cooperation with other agencies in this activity is also encouraged by DHR. The DHR will help inform the field personnel about the characteristics and appearance of these sites.

7. Any discovery of instances of looting or unauthorized destruction of these sites will be reported to the DHR so that appropriate action may be initiated. The Florida Marine Patrol and other enforcement personnel of DNR shall provide enforcement assistance to DHR and make arrests or investigate cases of looting or other unauthorized destruction of archaeological sites. The field personnel will follow the above management policy and become familiar with the personnel involved with this task in DHR and their procedures for identifying suspected sites.

5. WATER RESOURCES

Responsible management of water resources for the protection of human health and recreational enjoyment of the Aquatic Preserve water, as well as for the protection and enhancement of the Preserve's plant and animal communities is the most critical aspect of aquatic preserve management. Research to understand how human activity can alter or detrimentally affect the dynamic characteristics of the Preserve's various habitats can be approached confidently after monitoring data has been used to model the effects of naturally occurring variations on the same habitat. A single toxic substance may be all that is necessary to initiate irreparable ecological damage and change in the water resources of the aquatic preserve estuarine ecosystem.

Management Policy

The successful management of the water resources of the Aquatic Preserve depends heavily on other government agencies (i.e., DER and the Southwest Florida Water Management District) charged with regulating water quality and

quantity. Water resource management shall have as its major objective the maintenance of water quality and the natural seasonal fluctuations of fresh water into the estuary. Water resource data is available from governmental and non-governmental agencies, among them colleges, universities, scientific foundations and private consultants working in the area. These various entities have interests at many different levels and areas within the riverine and estuarine system. The aquatic preserve management program will manage the water resources through coordination with these various entities. The field personnel will not conduct water sampling, but through the review of data from other entities and from field observations, they will identify water resource problems in the aquatic preserve. Efforts will be made to ensure consistency in project design and sampling techniques so that data from various studies can be used for integrated analysis.

a. Familiarization with the Jurisdiction, Personnel and Monitoring Programs of Government Agencies and Other Entities. Field personnel will become thoroughly familiar with the jurisdiction, personnel and monitoring programs of other agencies, institutions, and corporations involved in studying, monitoring, regulating and managing water resources within the aquatic preserve and the drainage basins which provide fresh water to this preserve. Those agencies known to be working or having potential activities affecting the preserve are listed below; others may be added as they are identified.

1. Florida Department of Environmental Regulation
2. Citrus County Public Health Unit
3. Aquatic Services Division (part of Citrus County's Department of Technical Services)

4. Southwest Florida Water Management District
5. Marine Fisheries Commission
6. U.S. Geological Survey
7. U.S. Fish and Wildlife Service
8. Withlacoochee Regional Planning Council
9. Division of Forestry
10. Florida Game and Fresh Water Fish Commission
11. Florida Department of Natural Resources Marine Research Laboratory
12. University of Florida
13. University of South Florida
14. Central Florida Community College
15. U.S. Environmental Protection Agency
16. Eckerd College
17. Mote Marine Lab
18. Florida Power Company
19. Department of Natural Resource-State Reserve Section
20. Department of Natural Resources-Shellfish Sanitation Section
21. Sea Grant Extension Service
22. Citrus County Department of Development Services

b. Monitoring of Water Resources by Cooperative Data Collection and Review. Field personnel will: 1. promote coordination among involved agencies in planning monitoring programs and in evaluating monitoring data; and 2. monitor water resources within the preserve by reviewing the data collected and complied by those agencies as it applies to the aquatic preserve and its resources.

c. Review of Lease Application for Aquatic Preserve Uses and Watershed Activities that would affect the Preserve Water Resources. Field personnel will review sovereign land lease applications, development of regional impact reviews, and DER/COE permit applications in cooperation with other agencies as necessary, and as outlined in Chapter V (B5a) for their potential impact on the water resources of the aquatic preserve.

d. Familiarization with and Monitoring of Activities and Users which Regularly Contribute Pollutants to Preserve Waters. Field personnel will become familiar with the activities and users which regularly or potentially contribute pollutants to the waters of the Aquatic Preserve. This monitoring will be accomplished directly by field observations and indirectly by review of other entities' water resource data. Field personnel will encourage and coordinate with other agencies involved with water resource monitoring to consider more detailed field monitoring in areas of the preserve where the incidence of polluting activities is found to be high. These monitoring activities will also include the monitoring of freshwater releases into the preserve and their effect on the environment.

These activities will also be applicable to Chapter X (Scientific Research), and the coordination through Chapter VI (Management Implementation Network). By onsite inspection the field personnel will be able to monitor environmental impacts as and before they occur. Interaction with other federal, state and local agencies will facilitate this regulation.

6. CUMULATIVE IMPACT ANALYSIS

Cumulative impacts are the sum total of major and minor changes or effects upon the natural system. Taken singularly these effects may not constitute a

notable change in the condition of the natural system, but as these single changes or uses accumulate their combined impact may result in a substantive environmental disturbance or degradation of the natural system.

The review of proposed uses in the aquatic preserve from the perspective of cumulative impact analysis requires a thorough knowledge of the natural system and the various interactions and dynamics within the system. This aquatic preserve management program will initiate development of a cumulative impact analysis program. The evaluation of cumulative impacts shall include the following criteria from Chapter 18-20 F.A.C.:

"(1) The number and extent of similar human actions within the preserve which have previously affected or are likely to affect the preserve, whether considered by the Department under its current authority or which existed prior to or since the enactment of the Act; and,

(2) The similar activities within the preserve which are currently under consideration by the department; and

(3) Direct and indirect effects upon the preserve and adjacent preserve, if applicable, which may reasonably be expected to result from the activity; and

(4) The extent to which the activity is consistent with management plans for the preserve, when developed; and

(5) The extent to which the activity is permissible within the preserve in accordance with comprehensive plans adopted by affected local governments, pursuant to Section 163.3161, F.S., and other applicable plans adopted by local, state and federal agencies.

(6) The extent to which loss of beneficial hydrologic and biologic functions would adversely impact the quality or utility of the preserve; and

(7) The extent to which mitigation measures may compensate for adverse impacts."

The availability of onsite reserve staff who are familiar with the distinctive characteristics of this system, coupled with their ability to access LANDSAT imagery and mapping, and other data sources, is the key to development of a successful cumulative impact analysis program. As cumulative impacts are identified for specific areas and/or resources, they will become an integral part of the project analysis and decision-making process.

7. MANAGEMENT OF ENCROACHMENTS

The management of encroachments in the preserve will concern the unauthorized placement of structures, unauthorized dredging or filling, or other illegal uses in the aquatic preserve. These encroachments might also include illegal activities associated with an approved use (e.g., extension of a dock, construction of boat houses, extension of an approved channel).

The management policy for the field personnel, after identification of a suspected illegal encroachment, will involve a reporting procedure and the monitoring of the remedial action. After a field identification of a suspected encroachment, field personnel will notify the central office to verify the title of the property and research the possibility that the use was an approved activity. The potential for unauthorized activities in such an

extensive area is tremendous. A progressive system of mapping and recording will be initiated to assist the field personnel in their monitoring of the preserve. Aerial surveys will be done to facilitate reconnaissance of illegal activities and mapping.

The management action for verified illegal encroachment will be developed by the agencies specifically involved (i.e., DNR, DER). Field personnel will assist, as necessary, with field evaluation or other support activities. Final actions will be monitored by field personnel, at the direction of the Trustees to the central office. The procedures followed in these applications will be decided on a case by case basis.

C. RESOURCE MAPPING AND RESOURCE PROTECTION AREAS

The preliminary description and location of resources within the area (approximately 23,000 acres of submerged land), will require the use of remote sensing techniques. This work will be done in conjunction with DNR's Marine Research Laboratory. Marine Research Laboratory personnel have developed resource and habitat identification mapping through the use of LANDSAT (satellite) imagery and aerial photography. The vegetation and land use mapping done in this study will become the basis for the development of a Resource Protection Area management system in the aquatic preserves. This mapping system identifies and classifies various resources within the aquatic preserves that require protection by the management program. Acreage totals for each land use and vegetation classification in the preserve are provided. The onsite managers will supplement the vegetative portion of the mapping with wildlife and fisheries information (endangered, threatened, and species of

special concern, bird rookeries, etc.), archaeological and historical site information and other resource factors deemed crucial to the continued health and viability of the aquatic preserve.

These maps will then provide the information needed to develop and update a Resource Protection Area (RPA) mapping program. The RPA mapping system is based on three levels of resource classification. The RPA 1 level contains resources of the highest quality. Uses proposed for these areas receive the most rigorous review. The RPA 1 level includes one or more of the following: marine grassbed; live bottom; mangrove swamp; saltwater marsh; oyster bars; archaeological and historical sites (upland and submerged); endangered, threatened, and species of special concern habitats; colonial waterbird nesting sites; and other appropriate factors.

The RPA 2 areas are defined as those areas containing the resources of RPA 1, but in a transitional condition compared to RPA 1. These resources may either be building toward RPA 1 status or declining to RPA 3 status. RPA 2 areas will require careful field review as to the specific area's sensitivity to each proposed use. In some respects, these areas may be more sensitive to disturbances than RPA 1 areas. The resources of RPA 2 will include: designated species habitats; marine grassbeds; mangroves in scrub condition or colonizing new lands; beaches undergoing restoration; saltwater marsh colonizing new lands; and other resources of RPA 1 type that fit in the RPA 2 condition.

RPA 3 areas are characterized by the general absence of the attributes of the above two classes. RPA 3 areas may have small localized RPA 1 or 2 areas within them. RPA 3 generally have deep water areas or areas with no significant vegetation or wildlife attributes. Nearshore and bottom areas significantly modified by man are designated RPA 3.

These RPA maps will require periodic revisions as the onsite managers learn more about the resource's reactions to man's uses. Scientific research and other data additions may also require modification of this system. Natural changes will also require modification of this classification system. Periodic checking by LANDSAT satellite imagery will become useful for remote sensing monitoring as its use is more fully developed.

The RPA maps will become a planning tool for both onsite and central office staff. More detailed field review will still be required to supplement this information on a case by case basis, as necessary.

The initial development, as well as periodic review, will require the support and assistance of the many other resource regulating and managing agencies, as well as local and regional government entities. Support will also be requested from the colleges, universities, foundations and other interested groups and individuals.

The RPA mapping may use the USGS 7.5 quadrangle map format for vegetation and these maps will be available at the central office. It is recognized that mapping at this scale may not adequately define small areas which do not qualify for the RPA class level assigned to a general area.

D. ADMINISTRATIVE MANAGEMENT OBJECTIVES

This section of the chapter addresses the role of the central office, in the aquatic preserve management planning and implementation process. The central office's role is generally interpreted within the context of coordinating activities with the field personnel. This coordination linkage is important to many program aspects, including project review evaluation, local contact initiation, administrative rule development, contractual services and conflict resolution, and the routine support (payroll, operating expenses, etc.) usually extended by the central office to the onsite managers. All program activities identified within this context are designed to protect and enhance the environmental, educational, scientific, and aesthetic qualities of the natural systems of the aquatic preserve.

1. Objectives

Specifically, the following administrative objectives are an essential part of the aquatic preserve management program.

a. To ensure a comprehensive, coordinated review and evaluation of proposed activities potentially affecting the environmental integrity of the aquatic preserve.

b. To serve as the link between aquatic preserve field personnel and state agencies and programs which originate in Tallahassee.

c. To serve as the primary staff in the development of administrative rule additions, deletions, and revisions.

d. To serve as the administrative staff for contractual agreements and services.

e. To establish and maintain a conflict resolution process.

f. To review all existing and past activities as to their affect on the environmental integrity of the aquatic preserve.

2. Project Review and Evaluation

A major element in the administration of an aquatic preserve management system is the establishment of a thorough project review process. It is the program intent that the central office staff review all proposed activities requiring the use of state-owned lands within the preserve. Sections 258.42 through 258.44, F.S., establish the legal context within which all proposed uses of the aquatic preserve must be evaluated. Essentially, these sections require that projects be basically water dependent or water-enhanced, not contrary to the lawful and traditional uses of the preserve, and not infringing upon the traditional riparian rights of the upland property owner.

The primary mechanism through which proposed uses are reviewed is accomplished by participation in the state lands management process as established by Chapter 253, F.S., and modified by Chapter 258, F.S. The central office was administratively designated, on October 4, 1982, as an agent of the Trustees, for the purposes of evaluation the environmental consequences of proposed uses of state-owned lands within aquatic preserves.

In conducting the environmental evaluations, the central office staff will rely heavily upon the most current, readily available data such as Department of Transportation (DOT) aerial photography, LANDSAT imagery, DER biological reports, and other data resources. If a proposed activity is legally consistent with the maintenance criteria outlined in Section 258.42 F.S. and

Chapter 18-20, F.A.C., and is generally of negligible environmental concern, then the project review will likely be conducted in its entirety by the central office staff, utilizing the generalized environmental data. The field personnel will be requested to conduct a more detailed environmental assessment of the project if the central office staff, during the course of the preliminary application review, determines that the requested use of state-owned lands may have a significant effect upon the environmental integrity of the preserve. Copies of all applications received will be provided to the field personnel for project monitoring and assessment of the possible cumulative impacts.

Field personnel will be encouraged to establish direct communication links with the various regulatory and management agencies for purposes of obtaining advance notifications of projects potentially affecting the preserve. All environmental review and assessment, however, will be channeled through the central office unless other arrangements have been previously cleared with the central office.

While the State Lands Management Program authorized by Chapters 253 and 258, F.S. and Chapters 18-21 and 18-20, F.A.C., is expected to be the primary management implementation vehicle for the aquatic preserve, it is by no means the only vehicle. Section 253.77, F.S., as amended, and the December, 1982 Memorandum of Understanding between the COE, DER, and DNR provide direct access to DER 's permitting process for DNR. The Development of Regional Impact (DRI) and other regional or state level review processes represent other implementation mechanisms. The basic review approach and the evaluation

between the field personnel and the central office staff will be the same as the case involving the State Lands Management program.

One aspect of the aquatic preserve review and evaluation program is the identification of proposed activities that are either generally or specifically prohibited. Immediately upon review of such project application, the central office staff will notify the Division of State Lands (or other program managers) that the proposed activity is legally unapprovable for the stated reasons. For those proposals which are subject to denial due to their adverse environmental impacts, even though the activity may be permissible, Section 258.42, F.S., specifically provides that:

"(1) No further sale, lease, or transfer of sovereignty submerged lands shall be approved or consummated by the trustees except when such sale, lease, or transfer is in the public interest.

(2) The trustees shall not approve the waterward relocation or setting of bulkhead lines waterward of the line of mean high water within preserve except when public road and bridge construction projects have no reasonable alternative and it is shown to be not contrary the public interest.

(3) (a) No further dredging or filling of submerged lands shall be approved by the trustees except the following activities may be authorized pursuant to a permit:

1. Such minimum dredging and spoiling as may be authorized for public navigation projects.

2. Such minimum dredging and spoiling as may be authorized for creation and maintenance of marina, piers, and docks and their attendant navigation channels.
3. Such other alteration of physical conditions as may, in the opinion of the trustees, be necessary to enhance the quality or utility of the preserve or the public health generally.
4. Such other maintenance dredging as may be required for existing navigation channels.
5. Such restoration of land as authorized by S. 253.124(8).
6. Such reasonable improvements as may be necessary for public utility installation or expansion.
7. Installation and maintenance of oil and gas transportation facilities, provided such facilities are properly marked with marine aids to navigation as prescribed by federal law.

(b) There shall, in no case, be any dredging seaward of a bulkhead line for the sole or primary purpose of providing fill for any area landward of a bulkhead line.

(c) There shall be no drilling of gas or oil wells. However, this will not prohibit the state from leasing the oil and gas rights and permitting drilling from outside the preserve to explore for oil and gas if approved by the board.

(d) There shall be no excavation of minerals, except the dredging of dead oyster shells as approved by the Department of Natural Resources.

(e) There shall be no erection of structures within the preserve, except:

1. Private docks for reasonable ingress or egress of riparian owners;
2. Commercial docking facilities shown to be consistent with the use or management criteria of the preserve; and
3. Structures for shore protection, approved navigational aids, or public utility crossings authorized under subsection (3)(a).

(f) No wastes or effluents shall be discharged into the preserve which substantially inhibit the accomplishment of the purposes of this act.

(g) No nonpermitted wastes of effluents shall be directly discharged into the preserve which substantially inhibit the accomplishment of the purposes of this act."

Generally, applicants desirous of appealing staff recommendations will have to follow those appellate procedures outlined in the appropriate authorizing statutes. In the case where applications requesting the use of state-owned lands are denied, three appellate procedures are available to the applicant.

Depending upon the type of application submitted, an applicant may:

a. Request the Governor and Cabinet to overturn an application decision rendered by the Executive Director or Department of the Natural Resources (or his designee) under a delegation of authority;
b. Request an Administrative Hearing under the procedures outlined in Chapter 120, F.S.; or
c. Appeal the action of the Board of Trustees of the Internal Improvement Trust Fund to the District Court of Appeals.

3. Liaison Between Field Personnel and Other Interested Parties

One of the most important aspects of the field personnel's job is to establish a mutually beneficial communication link with pertinent interest groups. The central office staff will assist in initially identifying and contacting governmental bodies, special interest groups and interested individuals requiring aquatic preserve program coordination.

When requested by the onsite managers, the central office staff will assist in arranging for specialized management expertise not generally available locally. This may include, for example, such things as arranging for DHR to conduct a detailed cultural resource assessment for certain areas of the preserve.

Chapter VI

Management Implementation Network

This chapter of the management plan will address the various relationships of aquatic preserve management to the different government agencies and program, non-governmental entities, interest groups, and individuals within the aquatic preserve area. The activities of both field personnel and central office staff as they relate to these other organizations will be presented.

A. Federal

Many federal agencies have property interests, land and wildlife management programs, research activities, construction activities, and regulation programs existing or potentially existing within the aquatic preserves. The objective of the aquatic preserve management program will be to complement the various activities wherever possible. The field personnel will assist those federal agencies in areas where they have common goals. The field personnel and central office staff will also review the federal activities as to their effect on the objectives of the aquatic preserve management. This review shall be coordinated through the DER's Office of Coastal Management for the purposes of enforcing the provisions of the Federal Coastal Zone Management Act of 1972, as amended.

1. United States Fish and Wildlife Service The aquatic preserve program will be involve in the review of proposed preserve uses in conjunction with the Fish and Wildlife's Division of Ecological Services in Vero Beach. This division reviews dredge and fill requests and other federal level permitting under the Fish and Wildlife Coordination Act.

Another management program in which the field personnel could possibly interact with the Fish and Wildlife Service is the protection and recovery of endangered species and bird rookeries within the aquatic preserve. Field personnel will become involved in using available recovery techniques for this purpose, as necessary.

2. U.S. Army Corps of Engineers The U.S. Army Corps of Engineers (COE) is charged with providing technical guidance and planning assistance for the nation's water resources development. The COE also provides supervision and direction to many engineering works such as harbors, waterways and many other types of structures. Their major responsibility, as it applies to the aquatic preserve, is the protection of navigable waters, pollution abatement and maintaining water quality and the enhancement of fish and wildlife.

COE activities include their involvement with the DER in the dredge and fill permitting process, technical oversight of channel, inlet and canal maintenance, and evaluation requests for new channels, canals, and other such public work projects. The field personnel will become familiar with the various programs, policies and procedures as they apply to the aquatic preserve.

Field personnel and central office staff will also review activities proposed by the COE for conformance to the objectives of the aquatic preserve management plan. This involvement should begin in the early stages of project planning in order to facilitate the best protection of the aquatic preserve possible.

3. U.S. Geological Survey The U.S. Geological Survey (USGS) under the Department of the Interior has the responsibility to perform surveys, investigations, and research pertaining to topography, geology, and the mineral and water resources of the United States. USGS also publishes and disseminates data relative to those preceding activities. In the past the USGS has conducted many studies on various resources in the region.

The field personnel and central office staff will become familiar with these studies and the data results as they apply to their management activities.

4. U.S. Environmental Protection Agency. The U.S. Environmental Protection Agency (EPA), in cooperation with state and local governments, is the federal agency responsible for the control and abatement of environmental pollution. The six areas of pollution within which the EPA is concerned are air, water, solid waste, noise, radiation and toxic substances. The DER is the state agency responsible for handling most of these programs on the state level in lieu of a federal program. Within the aquatic preserve, the field personnel will assist the EPA in planning field activities and where there are common goals.

5. U.S. Coast Guard. The U.S. Coast Guard is the federal agency involved in boating safety, including search and rescue when necessary. The Coast Guard is also charged with the permitting of structures which affect navigation and boating safety. These structures include bridges, causeways, aerial utilities and other structures which may be in conflict with navigational uses. The field personnel, in conjunction with the central office staff, will also review projects which the Coast Guard may be evaluating for permits.

6. National Marine Fisheries Service. The National Marine Fisheries Service (NMFS) under the U.S. Department of Commerce is active in the St. Martins Marsh area in recording commercial fish landings. The NMFS also has enforcement officers in the area checking for illegal fishery activities. Field personnel will work with these personnel whenever they have common goals within the aquatic preserve.

B. STATE

Many state agencies have programs which affect the resources or regulate activities within the aquatic preserve. There are also other DNR programs that are within or affect the St. Martins Marsh Aquatic Preserve. This section will describe the interactions and relationships of these various agency programs and how they relate to aquatic preserve management.

1. Department of Environmental Regulation. The Department of Environmental Regulation (DER) is responsible for regulating air and water quality and, in some cases, water quantity (through the water management district) within the

Citrus County area. The DER is also the local contact for the initiation of dredge and fill applications in conjunction with the COE and DNR. With respect to water quality and dredge and fill regulation, the DER is possibly one of the most important agencies to the management of the aquatic preserve. The water quality of the preserve is the most important factor to the health of the estuarine complex, and dredge and fill activities are one of the most potentially destructive activities within the preserve. The DER also regulates other forms of pollution, such as air, noise, wastewater and hazardous waste, which may be important in the future to the preserve.

Field personnel will become familiar with the water quality, dredge and fill, and other regulatory programs that are important to the aquatic preserve. The field personnel should develop a close working relationship with DER staff and become familiar with DER field activities and programs that are in common with the objectives of the aquatic preserve management program. Field personnel should open the most efficient line of communication with the local offices to receive the permit applications for DER as soon as possible to improve the response time within the review process.

The DER, Office of Coastal Management is charged with coordinating activities related to coastal management in the state and reviewing federal actions for consistency with the State Coastal Management Program, Section 280.20, F.S. The central office staff will maintain a close relationship with the Office of Coastal Management for assistance in the review of federal actions, data and research needs, and other program support.

2. Department of Community Affairs. The Department of Community Affairs (DCA) is responsible for reviewing Developments of Regional Impact (DRI) and for designating Areas of Critical State Concern (ACSC). DRI's are major developments that have impacts on a scale which is greater that county level and require a regional review from neighboring local governments and state agencies. Both the central office staff and field personnel of the aquatic preserve program will be involved in reviewing DRI's. Field personnel should receive notice of a DRI through the central office staff and will proceed with the field review. The central office staff will coordinate field review findings and work with the other state agencies in Tallahassee in the review of DRI.

The ACSC program is intended to protect the areas of the state where unsuitable land development endanger resources of regional or statewide significance. When an area is identified as a possible ACSC, a Resource Planning and Management Program (RPMP) is established. The RPMP evaluates the resources, and the local government's land development practices. After this evaluation is complete, the RPMP committee makes recommendations to the local governments on how their land development practices could be improved to ensure an orderly and well-planned growth that would protect the critical resources. The local governments, counties and cities, are now in the process of making these land development modifications, based on the RPMP recommendations. If these modification are not made to the RPMP Committee's approval, those areas of local government that are not in conformance could be designated as ACSC or the entire area may be designated an ACSC by the Legislature. Under the ACSC designation, the local governments are required

to notify DCA of any application for a development permit. The entire land development process will require the state's oversight until that local government modifies its land development practices to conform to the ACSC requirements. The St. Martins Marsh Aquatic Preserve and Citrus County are not located within a state designated area of critical state concern.

3. Department of Natural Resources. The aquatic preserve management program is associated with several other Department of Natural Resource (DNR) programs in the Crystal River - Homosassa Springs area.

DNR's Division of Marine Resources has statutory authority under section 370.02(2), F.S. to perform research directed toward the broad objective of managing fisheries research. The Division's Marine Research Laboratory in St Petersburg has several programs and projects within this area which will benefit the aquatic preserve program. As a product of a fishery habitat loss study, Resource Protection Area mapping is being done and will be used in the management of the preserve. The data from this project, when completed, will be incorporated into this management plan. The Marine Lab is also involved in manatee protection programs and the lab is the headquarters of the State Manatee Coordinator. These projects include distribution and abundance surveys, as well as mortality statistics and public education. Field personnel will become familiar with these studies and programs, and will consult the Marine Lab for their data needs whenever possible.

The Division of Marine Resources also handles the permitting for the collection of certain marine species and use of certain chemicals. The field and central office staff will become familiar with this permitting process and request notification of these permits within the aquatic preserve.

The Marine Patrol, under DNR's Division of Law Enforcement, also operates in St. Martins Marsh. The field personnel will become familiar with their programs and operation, and will call on the Marine Patrol for law enforcement support as required.

The Division of State Lands within the DNR is charged with overseeing uses, sales, or transfers of state-owned lands. The aquatic preserve staff will interact with State Lands in all transactions concerning submerged lands within the aquatic preserve. These would include potential acquisition of privately titled submerged lands or contiguous uplands important to the integrity of the preserve.

The Division of Resource Management, through the Bureau of Geology and Aquatic Plant Research and Development, is responsible for various programs potentially affecting the aquatic preserve. Staff will establish communication links with this Division to ensure that adequate consideration is given to potential impacts upon the preserve that may result from the conduct of their various programs.

The Division of Recreation and Parks, in addition to the work related to aquatic preserves by BLARM and the Florida Park Service, is also involved in the management of State Parks and Recreation Areas and the adjacent Crystal River State Reserve. The aquatic preserve will work closely with these programs as they relate to aquatic preserve management objectives.

4. Marine Fisheries Commission (MFC).

The MFC was established as a rulemaking authority pursuant to Section 370.027. F.S. The seven members are appointed by the Governor and are delegated full rulemaking authority over marine life (subject to approval by the Governor and Cabinet), with the exception of endangered species. This authority covers the following areas: a) gear specifications, b) prohibited gear, c) bag limits, d) size limits, e) species that may not be sold, f) protected species, g) closed areas, h) quality control codes i) season, and j) special considerations related to eggbearing females and oyster and clam relaying. Field personnel and central office staff will become familiar with and enforce the rules of the MFC.

The MFC is also instructed to make annual recommendations to the Governor and Cabinet regarding marine fisheries research priorities. The field and central office staff will use these and other recommendations to approve research efforts within the aquatic preserve.

5. Florida Game and Fresh Water Fish Commission (GFWFC). The GFWFC's Environmental Services office in Tallahassee sends biologists into the preserve to review projects which may have potential impacts on local fish and wildlife habitat as necessary. The central office will use the GFWFC's assistance in their review process, when possible, and in developing fish and wildlife management for the aquatic preserve.

The GFWFC is also the state coordinator of the Endangered Species in Florida.

The field personnel and central office staff will work with GFWFC personnel in developing program needs in this area.

6. Department of Transportation (DOT). The aquatic preserve field staff and the central office will work with the resident engineer on anticipated projects having possible impacts on the aquatic preserve. The field personnel and administrative staff will review any major highway or bridge projects that may be proposed in the future.

7. Department of State. The Division of Historical Resources (DHR) in the Department of State will have a close working relationship with the field personnel and central office staff in the protection of archaeological and historical sites. The field personnel will be directed by DHR, through the central office, in any activities or management policy needs for these sites.

8. Health and Rehabilitative Services (HRS). Both the central office staff and field personnel will establish communication and coordination linkages with HRS and their locally conducted programs of septic tank regulation and mosquito control. Although mosquito control serves a useful public function, the effects of pesticides (adulticides and larvacides) in the waters of the preserve are a primary concern. Additionally, the central office staff will become involved in future meetings and management programs developed by the Florida Coordinating Council on Mosquito Control. Subsequent policy recommendations coming out of this group will be evaluated for applicability to the ongoing aquatic preserve management program.

C. REGIONAL

The regional level of the management implementation process as it applies to the St. Martins Marsh Aquatic Preserve includes the Southwest Florida Water Management District, and the Withlacoochee Regional Planning Council. These organizations have activities that are broader than that of the local government, but are on a smaller scale than the state level.

1. Southwest Florida Water Management District (SWFWMD). SWFWMD includes Citrus County along with 15 other counties in their jurisdictional area. The water management district administers permitting programs for the local consumable use of water, storm water discharges, and dredge and fill type activities. This includes the withdrawal and use of water from rivers, streams, and wells. The types of water uses they permit in the preserve area include irrigation and public water supply. Field personnel will become familiar with the review and permitting procedures as they apply to water supply in this area. The water management district is also involved in various studies on water supply and management, and other related research that may be of use to aquatic preserve management.

2. Withlacoochee Regional Planning Council (WRPC). The WRPC serves as a regional planning body for the local governments of Levy, Citrus, Marion, Sumter, and Hernando Counties. Among their duties, the WRPC:

a. aid local governments with planning expertise;

b. are the regional representatives for the Development of Regional impact (DRI) review process;

c. serve as a regional clearinghouse for state and federal projects and programs; and

d. convey information from the local governments to the state and federal levels.

Field personnel will become familiar with the various projects, programs, and data sources that the WRPC has within its administration that may affect or prove useful to the aquatic preserve program.

The DRI review of projects which affect the aquatic preserves will be conducted by the central office staff, taking into consideration the field personnel's field review, when necessary. DRI's for large marinas, large subdivisions on the uplands above the preserve, and commercial or industrial developments will require a field review by the field personnel as to their effect on the aquatic preserve.

D. LOCAL GOVERNMENTS AND SPECIAL DISTRICTS.

This section will address the relationship of the aquatic preserve management program to the various local government agencies, special districts, and their associated programs. The St. Martins Marsh Aquatic Preserve is entirely contained within Citrus County and does not have any incorporated cities immediately adjacent to it. The various special districts (drainage, inlet and mosquito control) and their relationship to aquatic preserve management, are also presented.

Field personnel will be the local liaison for the aquatic preserve to these local government entities to assist them in modifying their policies and practices to conform to the objectives of the aquatic preserve's management plan, and to exchange information and expertise for mutual benefits.

1. Relationship to local management plans. Local (municipal and county) governments are required by the Local Government Comprehensive Planning Act of 1975 (LGCPA), (Section 163.3161, F.S.) [as amended by Chapter 85-55, Laws of Florida to the Local Government Comprehensive Planning and Land Development Regulation Act] to have a comprehensive management plan with elements relating to the different governmental functions (i.e. housing, physical facilities, conservation, land use, and coastal zone protection). Local governments must produce comprehensive plans pursuant to the minimum criteria set forth in Chapter 9J-5 F.A.C. These plans, in effect, are long-range plans for the orderly and balanced development of the city or county. The comprehensive plans guide local zoning policies and practices toward a future as set out in the plan. No development is permitted that does not conform to the local government's comprehensive plan.

The aim of the aquatic preserve, with respect to these local government comprehensive plans, is to have their plans be consistent with the aquatic preserve management plans. Review of the comprehensive plan for Citrus County has produced no obvious inconsistencies between the policies of the comprehensive plan and the resource management policies of this aquatic preserve plan. As this local government proceeds to revise their plan staff will review existing and new policies that apply to resource protection in the area surrounding St. Martins Marsh, and will advise local governments of their consistency with Trustees adopted policies for the preserve. It is expected that local governments will join in the spirit of aquatic preserve management and will work for these changes.

2. Relation to local development codes. The local zoning and development codes (e.g., building codes) provide the major local regulation that defines what an owner can do on a particular parcel of property. The zoning prescribes the allowable uses and the intensity of those uses. Certain uses along an aquatic preserve can potentially have a profound effect on the preserve.

This section will operate in conjunction with the preceding section on local management plans. The field personnel will become familiar with the local zoning, development codes and their potential effects on the nearby aquatic preserve. Field personnel will assist local planning and zoning officials in identifying areas where changes in zoning would better conform to the objectives of the aquatic preserve management. Field personnel might also offer to assist local planning and zoning officials in the review of proposed subdivisions upland of the preserve.

3. Suggested policies and practices in support of Aquatic Preserve Management. This section will address any other policy or practice not covered in the two preceding sections. These policies and practices might include local government mangrove ordinances; recreation problems where a park is in or near an aquatic preserve, or any other problems as they might relate to local governments. The field personnel will offer assistance or information to local officials or will coordinate with other agencies to help solve these problems as they occur. Field personnel will also comment, through the central office, on any local practice that is identified as endangering the well-being of the aquatic preserve.

4. Special Districts (Drainage, Inlet and Mosquito Control. The special districts are taxing districts established to correct drainage and mosquito control problems. This is one drainage district that directly affects the preserve. Citrus County has only one mosquito control district.

This district may not have its own official comprehensive management plan, but it does have a management policy and program statement that is similar to such a plan. Field personnel will become familiar with these policies and the activities of this district and will monitor its effect on the aquatic preserve. For example, field personnel might recommend identifying areas that should not receive mosquito spraying or other alternative management because of the remoteness to inhabited areas and possible, but unnecessary damage to the resources of the aquatic preserve; or drainage districts might be asked not to use certain types of herbicides or to use them only at certain times of the year.

E. OTHER ORGANIZATIONS

This section will apply to the numerous organizations that have an interest in the aquatic preserve but are non-governmental agencies. This will include, but not be limited to, the environmental interest groups (i.e., Audubon Society, Sierra Club and Native Plant Society), the scientific organizations, the fishing and sports interest groups (i.e., Florida League of Anglers, Organized Fishermen of Florida), the universities that may have research activities in the preserve (i.e., University of South Florida, University of Tampa, University of Florida, Central Florida Community College) and any other interest groups or individuals. The relationship of these organizations to

aquatic preserve management might include the coordination of activities, such as scientific research, environmental education, management of rookeries or other natural areas, or numerous other possible activities. A worthwhile aquatic preserve management process will depend on the continued support and help of these interest groups in the preserve. Field personnel will be active in communicating the aquatic preserve management process and activities to the various groups and consulting with them for their help in their areas of expertise.

Preface

(Chapters VII -IX)

Authorized Activities and Uses of Aquatic Preserves

The following chapters provide a description of public, private and commercial activities/uses that are allowable pursuant to statutory direction and all other applicable authorities in aquatic preserves. These activities/uses are subject to the approval of the Board (Governor and Cabinet) or their designee. Approval of these activities/uses is normally predicated upon a demonstration that the proposed activity/use is environmentally sound and/or is, in the opinion of the Board, necessary in conjunction with an overriding public need.

In all cases, approved activities/uses that adversely impact the resources of an aquatic preserve shall only be approved when accompanied by adequate compensation measures that contribute to an overall net public benefit.

Mitigation measures, other than those associated directly with programs for habitat reestablishment or rehabilitation, are viewed by the Board as inadequate attempts to compensate for alteration of essentially natural ecological conditions through the establishment of artificial resource systems. Therefore, mitigation will only be encouraged in conjunction with on and off-site projects that are designed to reestablish natural habitat values and where the aquatic preserve will biologically and aesthetically benefit from the proposed restoration actions.

Chapter VII

Public Uses

This chapter addresses the public use of the preserve. The public in this case shall refer to the general public or those persons without riparian rights. The "Florida Aquatic Preserve Act of 1975" (Section 258.35, F.S) allows for the lawful and traditional public uses of the aquatic preserve, such as sport fishing, boating and swimming (as adapted from subsection 258.43(1), F.S.). These and other traditional uses that do not involve a commercial intent or the use of a riparian right to place a structure in the preserve, and do not degrade or otherwise destroy the preserve will be considered public uses. This section will be further divided into consumptive and non-consumptive uses as applicable to each resource.

A. Consumptive Uses

Consumptive uses involves the removal of resources from the preserve. These uses include fishing, hunting, shellfishing, and other related activities. They also include the unintentional removal of resources by propeller damage to seagrass beds and air boat damage to salt marshes. The management of these uses (see Chapter V. Resource Management, Section B: Onsite Management Objectives) will include the observation and monitoring of the effects of these uses on the resources. The field personnel will periodically assess the impacts through the use of the Marine Research Laboratory's LANDSAT capabilities, aerial photography, boat surveys and current studies or data sources for identifying habitat losses or disturbances in the St. Martins Marsh area. This management will also include the protection of the resources

from unlawful or excessive practices of these uses. Field personnel will, for example, become familiar with and monitor the success of rules adopted by the Marine Fisheries Commission. These will include regulations on fishing gear, bag and size limits, closed areas, seasons, etc,

These consumptive uses will also be monitored for their effect on other resources (e.g. bird rookeries, marine grassbeds, live bottom communities, archaeological and historical sites). The field personnel will also be sensitive to additional enforcement needs (i.e., the need for added enforcement staff during nesting seasons).

B. Non-consumptive Uses

These uses are those which do not generally remove resources from the preserve. Examples of these include swimming, diving, boating, bird-watching, and other related activities. Although boating and diving are usually considered non-consumptive uses, they can become consumptive when boat operators carelessly place anchors in seagrass beds, navigate into waters that are too shallow for their boats, or divers remove components of a live bottom community. Also air boat traffic across sensitive salt marsh or other wetland communities will be considered a consumptive use (i.e. destruction of plants, disturbance of rookeries). The management practices involved with these uses will be the same as those previously described under Section A., except that these uses are not generally controlled by law. The guiding principle in these cases will be whether or not the activity causes disruptions of the preserve's resources (e.g. destroys marine grassbeds or salt marshes, disturbs rookeries). Only in the event of these disruptions will the field personnel become involved. Some of these uses may possibly be involved in environmental educational programs (Chapter XI) .

Chapter VIII

PRIVATE NON-COMMERCIAL USES

This section will apply to those private, non-commercial uses which are derived from riparian land ownership. The management of the aquatic preserve recognizes the traditional riparian rights of the upland property owners. The right of ingress, egress, boating, swimming, fishing, and other incidental uses of sovereignty lands historically allowed for the placement of certain structures, such as docks, within the preserve. This right to make any preemptive use of sovereign lands is a qualified one and can only be exercised with the prior consent of the Board after a finding that such uses will not impair public uses or destroy or damage areas of environmental significance. The review of these will require the interaction of the Resource Protection Area mapping with administrative and possible field review and later monitoring by field personnel as projected by Chapter V., Section B.

Private non-commercial uses shall be designed to avoid critical Resource Protection Areas 1 and 2 and shall be designed to reduce the user's impact to the preserve in general. Individual applications for these private non-commercial uses shall be reviewed by the applicable Resource Protection Area Map and criteria. In addition, private dock proposals will be reviewed by the criteria described in Section 18-20.04(5),F.A.C. of the revised General Aquatic Preserve Rule:

1. no dock shall extend waterward of the mean or ordinary high water line more that 500 feet or 20 percent of the width of the waterbody at that particular location whichever is less;

2. certain docks may fall within areas of special or unique importance. These areas may be of significant biological, scientific, historic and/or aesthetic value and require special management considerations. Modifications may be more restrictive than the normally accepted criteria. Such modifications shall be determined on a case-by-case analysis, and may include, but shall not be limited to changes in location, configuration, length, width and height;

3. the number, lengths, drafts and types of vessels allowed to utilize the proposed facility may also be stipulated;

4. where local governments have more stringent standards and criteria for docking facilities, the more stringent standards for the protection and enhancement of the aquatic preserve shall prevail;

5. any main access dock shall be limited to a maximum width of four (4) feet;

6. the dock decking design and construction will insure maximum light penetration, with full consideration of safety and practicality;

7. the dock will extend out from the shoreline no further than to a maximum depth of minus four (- 4) feet (mean low water);

8. when the water depth is minus four (-4) feet (mean low water) at an existing bulkhead the maximum dock length from the bulkhead shall be 25 feet, subject to modifications accommodating shoreline vegetation overhang;

9. wave break devices, when necessary, shall be designed to allow for maximum water circulation and shall be built in such a manner as to be part of the dock structure.

10. terminal platform size shall be no more that 160 square feet; and

11. dredging to obtain navigable water depths in conjunction with private residential, single dock applications is strongly discouraged.

Bulkheads should be placed, when allowed, in such a way as to be the least destructive and disruptive to the vegetation and other resource factors in each area.

Dredging within the aquatic preserve shall be held to a minimum. Dredging proposals shall be reviewed according to the procedures in Chapter V depending on the proposed activities location within the RPA. Proposals within RPA 1 areas (Chapter V (C)) will be scrutinized to the maximum extent in order to find the best practical method of development and location if that use is deemed acceptable in that particular area of the preserve. The mitigation of

lost or disturbed resources shall be required and shall meet the above mentioned criteria. There shall be no dredging allowed in RPA 1 or 2 areas or in nearby areas if it will adversely impact these areas.

The location of proposed multiple docking facilities, such as condominium developments, shall be based on the marina siting criteria described in subsection 18-20.04(5) F.A.C. of the revised General Aquatic Preserve Rule.

1. no dock shall extend waterward of the mean or ordinary high water line more that 500 feet or 20 percent of the width of the waterbody at that particular location whichever is less;
2. certain docks may fall within areas of special or unique importance. These areas may be of significant biological, scientific, historic and/or aesthetic value and require special management considerations. Modifications may be more restrictive than the normally accepted criteria. Such modifications shall be determined on a case-by-case analysis, and may include, but shall not be limited to changes in location, configuration, length, width and height;
3. the number, lengths, drafts and types of vessels allowed to utilize the proposed facility may also be stipulated;
4. where local governments have more stringent standards and criteria for docking facilities, the more stringent standards for the protection and enhancement of the aquatic preserve shall prevail;
5. the area of sovereignty, submerged land preempted by the docking facility shall not exceed the square footage amounting to ten times the riparian waterfront footage of the affected waterbody of the applicant, or the square footage attendant to providing a single dock in accordance with the criteria for private residential single docks, whichever is greater. A conservation easement or other such use restriction acceptable to the Board must be placed on the riparian shoreline, used for the calculation of the 10:1 threshold, to conserve and protect shoreline resources and subordinate/waive any further riparian rights of ingress and egress for additional docking facilities;
6. docking facilities and access channels shall be prohibited to Resource Protection Area 1 or 2, except as allowed pursuant to Section 258.42(3)(e)1., Florida Statutes, while dredging in Resource Protection Area 3 shall be strongly discouraged;
7. docking facilities shall only be approved in locations having adequate existing water depths in the boat mooring, turning basin, access channels, and other such areas which will accommodate the proposed boat use in order to insure that a minimum of one foot clearance is provided between the deepest draft of a vessel and the bottom at mean low water;
8. main access docks and connecting or cross walks shall not exceed six (6) feet in width;
9. terminal platforms shall not exceed eight (8) feet in width;

10. finger piers shall not exceed three (3) feet in width, and 25 feet in length;

11. pilings may be utilized as required to provide adequate mooring capabilities; and

12. docking facilities shall only be located in or near areas with good circulation, flushing and adequate water depths;

13. docking facilities and access channels shall be prohibited in Resource Protection Area 1 or 2, except as allowed pursuant to Sections 258.42(3)(e)1., Florida Statutes; while dredging in Resource Protection Area 3 shall be strongly discouraged;

14. the docking facilities shall not be located in Resource Protection Area 1 or 2; however, main access docks may be allowed to pass through Resource Protection Area 1 or 2, that are located along the shoreline, to reach an acceptable Resource Protection Area 3, provided that such crossing will generate minimal environmental impact;

15. beginning July 1, 1986 new docking facilities may obtain a lease only where the local governments have an adopted marina plan and/or policies dealing with the siting of commercial/industrial and private, residential, multi-slip docking facilities in their local government comprehensive plan; [Senate Bill 607 enacted by the Florida Legislature in June 1986 amended section 258.42(3)(e) F.S., and provided that "no structure under this provision or Chapter 253 shall be prohibited solely because the local government fails to adopt a marina plan or other policies dealing with the siting of such structure in their local comprehensive plan".]

16. the siting of the docking facilities shall also take into account the access of the boat traffic to avoid marine grassbeds or other aquatic resources in the surrounding areas;

17. the siting of new facilities within the preserve shall be secondary to the expansions of existing facilities within the preserve when such expansion is consistent with the other standards;

18. the location of new facilities and expansion of existing facilities shall consider the use of upland dry storage as an alternative to multiple wet-slip docking;

19. marina siting will be coordinated with local governments to insure consistency with all local plans and ordinances;

20. marinas shall not be sited within state designated manatee sanctuaries; and

21. in any areas with known manatee concentrations, manatee warning/notice and/or speed limit signs shall be erected at the marina and/or ingress and egress channels, according to Florida Marine Patrol specifications.

Authorization of such facilities will be conditioned upon receipt of documentation evidencing the subordination of the riparian rights of ingress and egress for the remainder of the applicant's shoreline for the life of the proposed docking facility. Boat ramps and travel lift platforms or other similar launching facilities, with associated temporary mooring facilities

built with minimal damage to wetlands, will be encouraged over permanent wet storage facilities. Non-residential docking facilities (commercial) are addressed in Chapter IX.

The use of seaplanes within this preserve is seen as a non-traditional use. Applications for seaplane use within the preserve will be reviewed on a case by case basis. These uses will only be recommended where such use will not affect resource protection areas or natural values of the preserve, not effect endangered species habitat, can be utilized in a safe manner, and will not preempt traditional uses within the proposed use area.

Chapter IX

Commercial Uses

This section addresses the traditional commercial uses which might occur within the aquatic preserve. Among the traditional uses in the St. Martins Marsh area are utility crossings, marinas, commercial fishing, shellfishing, and sport fishing charters.

A. Traditional commercial uses

1. Utilities crossings. There are at present time only aerial utility crossings in the aquatic preserve. Future proposals should be designed so that the preserve is crossed by the least destructive method in the least vulnerable areas according to the RPA maps. Increased or additional use of any existing utility crossings is preferable, if their condition at the time of the proposal is acceptable. The field personnel should eventually develop a utility crossing plan for all areas with anticipated utility crossing needs to allow for clear advanced planning and for placement of these crossing in areas that would cause the least disturbance to the environment. The utility crossing plans, when completed, will become a part of this management plan. Crossings should be limited to open water areas where live bottom communities are not present, to minimize disturbance to marine grassbeds, mangroves or other critical habitat areas.

2. Commercial Fishing. The management of the aquatic preserve shall not include the direct management of commercial fishing activities. Field personnel will monitor these activities and assess their effects on the preserve only in conjunction with the Division of Marine Resources, the Florida Marine Patrol and the Marine Fisheries Commission, and as a cooperative effort with these agencies. The field personnel will also notify the requisite authority in the event of illegal activities (Chapter 370, F.S. or by special act). The field personnel, along with other agencies and division's programs and studies, will monitor fishing activities within the aquatic preserve. Monitoring will concentrate on boat access into certain areas, prevention of marine grassbed destruction and other needs of the aquatic preserve as they are associated with commercial fishing activities. After problems with commercial fishing activities are identified and documented, the finding will be presented to the Marine Fishing Commission. It is the authority of the Commission and the Florida Legislature to regulate commercial fishing within the preserve.

3. Marinas. The locating of marinas and their related uses will be a major concern of the St. Martins Marsh Aquatic Preserve management. Marinas represent a use with many potential impacts on the preserve's resources. The siting policy of Section 18-20.04(5) F.A.C. of the revised General Aquatic Preserve Rule shall be used for siting marinas in the aquatic preserve.

1. no dock shall extend waterward of the mean or ordinary high water line more that 500 feet or 20 percent of the width of the waterbody at that particular location whichever is less;
2. certain docks may fall within areas of special or unique importance. These areas may be of significant biological, scientific, historic and/or aesthetic value and require special management considerations. Modifications may be more restrictive than the normally

accepted criteria. Such modifications shall be determined on a case-by-case analysis, and may include, but shall not be limited to changes in location, configuration, length, width and height;

3. the number, lengths, drafts and types of vessels allowed to utilize the proposed facility may also be stipulated;

4. where local governments have more stringent standards and criteria for docking facilities, the more stringent standards for the protection and enhancement of the aquatic preserve shall prevail;

5. docking facilities shall only be located in or near areas with good circulation, flushing and adequate water depths;

6. docking facilities and access channels shall be prohibited in Resource Protection Area 1 or 2, except as allowed pursuant to Sections 258.42(3)(e)1., Florida Statutes; while dredging in Resource Protection Area 3 shall be strongly discouraged;

7. the docking facilities shall not be located in Resource Protection Area 1 or 2; however, main access docks may be allowed to pass through Resource Protection Area 1 or 2, that are located along the shoreline, to reach an acceptable Resource Protection Area 3, provided that such crossing will generate minimal environmental impact;

8. beginning July 1, 1986 new docking facilities may obtain a lease only where the local governments have an adopted marina plan and/or policies dealing with the siting of commercial/industrial and private, residential, multi-slip docking facilities in their local government comprehensive plan; [Senate Bill 607 enacted by the Florida Legislature in June 1986 amended section 258.42(3)(e) F.S., and provided that "no structure under this provision or Chapter 253 shall be prohibited solely because the local government fails to adopt a marina plan or other policies dealing with the siting of such structure in their local comprehensive plan".]

9. the siting of the docking facilities shall also take into account the access of the boat traffic to avoid marine grassbeds or other aquatic resources in the surrounding areas;

10. the siting of new facilities within the preserve shall be secondary to the expansions of existing facilities within the preserve when such expansion is consistent with the other standards;

11. the location of new facilities and expansion of existing facilities shall consider the use of upland dry storage as an alternative to multiple wet-slip docking;

12. marina siting will be coordinated with local governments to insure consistency with all local plans and ordinances;

13. marinas shall not be sited within state designated manatee sanctuaries; and

14. in any areas with known manatee concentrations, manatee warning/notice and/or speed limit signs shall be erected at the marina and/or ingress and egress channels, according to Florida Marine Patrol specifications.

4. Deep Water Port Facilities. There are no major deep water port facilities within the boundaries of the preserve but Florida Power Companies Crystal River Facility is located immediately north of the preserve. Therefore maintenance dredging and potential pollution from accidental cargo leakage

would adversely affect the preserve. New activities and maintenance work will be reviewed as to their affect on the preserve. New port facilities within the preserve shall be prohibited.

5. Other Docking. Any other type of commercial docking, not mentioned in the preceding sections, will follow the marina siting policy as stated in Section 18-20.04(5), F.A.C. of the revised General Aquatic Preserve Rule.

B. Non-traditional Commercial Uses

1. Power Plants. Power plants have the potential for causing major changes in the air quality, water quality, and plant and animal life of the aquatic preserve. For these reasons, power plants are incompatible with the purposes of this aquatic preserve. The location of proposed power plants should be evaluated as to the effects on the preserve.

2. Aquaculture. The St. Martins Marsh area could potentially have proposals for aquacultural development in the future. These may include floating structures or other new techniques now being used in aquaculture. The location and type of impacts to the resources will require careful examination. If there is not sufficient data available for a valid evaluation, a small scale test of the use might be possible in a selected area.

3. Other Uses. Any other use that qualifies as a commercial use of submerged lands not mentioned above will require a review for its anticipated impact on the aquatic preserve and the best location for the activity compatible to the resource protection areas within the preserve.

Chapter X

Scientific Research

The field personnel attached to the St. Martins Marsh Aquatic Preserve should serve as the area coordinators of the scientific research in the preserve. Scientific research, and any other type of research or testing within the aquatic preserve, should require the clearance of both the field personnel and the central office staff before these activities can proceed. Certain activities could be detrimental to the resources of the preserve and should be carefully reviewed before allowing them to occur. Factors including location, species selection, time of year, and life history, should be carefully reviewed for the possible disturbance or effect of the research on the other resources of the aquatic preserve. The field personnel will be aware of the possibility of working with other government agencies, colleges, universities, research foundations and government programs to fill the data needs of the aquatic preserve (see Chapter V and XII). The field personnel will assist in the selection of possible tests sites and other research needs within the preserve.

Chapter XI

Environmental Education

The aquatic preserve should be used to enhance environmental education programs at every opportunity. The goal of maintaining the aquatic preserve for the benefit of future generations can begin to be realized through the use of aquatic preserves for environmental education. Through education, the people of Citrus County can acquire a knowledge of the natural systems and an appreciation for the aquatic preserve program. Such appreciation helps to ensure the future protection and support of the aquatic preserve.

The field personnel will, through their normal activities in the aquatic preserve, select good examples of habitats and resources within these aquatic environments for use during educational group tours. This might include the development of environmental educational boat or canoe tours through the preserve. Other educational activities might also include prepared presentations for specific interest or user groups such as sport (boating, diving, fishing, etc.), civic and conservational groups and the development of a brochure outlining the major points of management within the preserve. These brochures could then be circulated to the various user groups.

The field personnel would also prepare slide programs on the value of

management activities of the aquatic preserve for presentation to interested groups of all ages. Educating the public about aquatic preserve management is the key to the success and future of the preserve.

Chapter XII

Identified Program Needs

This chapter of the management plan will address the various program needs that are expected to be identified during management activities. Meeting these needs will correct or generally relieve some stress on the preserve or the personnel involved in the management of the preserve. These needs may, in some cases, require legislative or administrative rule changes or acquisition of critical areas by the state. The need to identify problem areas and adjust the management plan in a manner that will positively address these problems and management needs is an essential element of any effective management program. Both field personnel and central office staff will continually monitor the management plan implementation process and specifically identify observed program needs and problems. The areas to be included are but will not be limited to:

A. acquisition of additional property,

B. boundary problems,

C. legislative needs,

D. administrative rule changes,

E. data needs,

F. resource protection capabilities, and

G. funding and staffing needs.

Staff will annually develop an implementation status report that will contain a summary of identified management needs and suggested measures to be taken in meeting these needs.

A. Acquisition of Additional Property

There are areas both within and upland of the aquatic preserve that are in public ownership under the jurisdiction of various local, state and federal agencies. Many of these lands contain important resources, such as bird rookeries, archaeological or historical sites, endangered species habitat, and freshwater source wetlands. Formal management agreements, memoranda of understanding etc., that will ensure the compatible management of these areas will be developed. Other areas within or adjacent to the preserve that are within private ownership should be closely examined to determine the advisability of bringing them into public ownership. The acquisition of these lands might act as a buffer to critical resources, prevent development of sensitive areas, allow restoration of areas adversely affected by previous development, or allow removal of disrupting uses within the preserve. The field personnel, during normal management activities, should be aware of significant upland areas and submerged land areas which, if developed, would compromise the integrity of the aquatic preserve. The field personnel will keep a running record of these areas and will prioritize these areas for possible public acquisition.

B. Boundary Problems and Systems Insufficiencies

The boundaries of the aquatic preserve are often artificial delineations of the natural systems within and surrounding the preserve. The field personnel, in their normal management activities, will be sensitive to the possible need for boundary modifications. Potential boundary changes and acquisition projects might include areas upstream of the present boundary of the streams flowing into the preserve, previously conveyed sovereign lands, or other areas not presently within the preserve. Boundary change requires Legislative approval.

C. Legislative Needs

Management needs could conceivably involve changes in the Legislature pertaining to the aquatic preserve or changes in the other statutes upon which the aquatic preserve is based. These changes may include boundary realignments or the strengthening of certain management authorities.

D. Administrative Rule Changes

Administrative rules are statements addressing the organization, procedures and practices used in the implementation of aquatic preserve management plans and policies. This process includes identifying problems within the managing agency as well as other agencies, that will affect the management of the preserve.

E. Data (Information) Needs

The field personnel and central office staff will note data needs and promote research or other means to obtain them. Data needs in the near future could

possibly be supplied by such ongoing projects as the U.S. Geological Survey's and the Southwest Water Management District's studies, Department of Environmental Regulation water quality monitoring or by the research of other agencies. The field personnel will be aware of the data needs as they interact with the various levels of government and with other entities. These data needs might include additional mapping, ownership information, water quality data or any other data. The major suppliers of data will probably be other public agencies that are conducting programs in and around the preserve. Other potential sources of data are the colleges and universities that have in the past, conducted or are currently conducting, research projects in the area.

F. Resource Protection and Enforcement Capabilities

The protection of the preserve's resources depends on the Florida Marine Patrol in addition to field personnel. These protection needs might also include additional enforcement support from local government or state agencies. The need for additional manpower, authority, equipment or vehicles for this task will be identified.

Since many of the inlets of this preserve are extremely shallow, bottom damage due to boat groundings or propeller damage are common. To eliminate this problem boat markers should be placed in the channels of these inlets.

The field personnel will become familiar with the staff capabilities of both the Department of Natural Resources and other agencies with enforcement

responsibilities in the preserve. Annually, staff should fully assess the effectiveness of the protection and enforcement capabilities of these combined agencies.

G. Funding and Staffing Needs

The present aquatic preserve management program has been minimally implemented with funds from a variety of sources and programs. The writing of this management plan was funded through a grant from the U.S. Office of Coastal Zone Management, National Oceanic and Atmospheric Administration, and through the "Coastal Zone Management Act of 1972", as amended.

Funding for staff to manage the St. Martins Marsh Aquatic Preserve was provided by the 1986 Florida Legislature. This included one full-time Career Service staff position and an office located at 10718 West Fort Island Trail located in Crystal River, Florida 32629. Continued funding and staffing are critically important to the success of the aquatic preserve program. An operational budget for the onsite staff of the Preserve, as well as for needed equipment and expenses for continued operation is shown below.

An Operational Budget (Fiscal Year 1988-89) for the St. Martins Marsh Aquatic Preserve Management

Salary (Environmental Specialist II) and Associated Overhead	= 30,000
Operating Capital Outlay (TOTAL)	= 15,000
Operation Expenses	= 25,000
TOTAL	$70,000

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CONTENTS OF APPENDICES

A. Florida Aquatic Preserve Act of 1975 (§ 258.35-358.46, F.S.)

B. Administrative Rules for Florida's Aquatic Preserve (§ 18-20, F.A.C.)

C. Administrative Rules for Florida Sovereignty Submerged Lands Management (§ 18-21. F.A.C.)

D. Legal Description of St. Martins Marsh Aquatic Preserve (Resolution of the Board of Trustees of the Internal Improvement Fund, #70-20 dated November 20, 1970).

* Copies of the above appendices may be obtained from:

Bureau of Land and Aquatic Resource Management
Department of Natural Resources
Cedars Executive Center, Suite 232-B
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Tallahassee, Florida 32303